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The Public Lighting Tables of the American Meter Company will be found in the page advertisement of that Company.

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[NOTICE.]

Wrinkle Department, American Gas Institute.

WRINKLE DEPARTMENT, AMERICAN GAS INSTITUTE,
OFFICE OF EDITOR, GAS OFFICE BUILDING,
DETROIT MICH, March 12th, 1909.

To the Members, American Gas Institute: All members of the American Gas Institute are earnestly requested to forward contributions for the Wrinkle Department as soon as possible.

Your co-operation determines the success of the Department.

F. L. CROSS, Editor.

BRIEFLY TOLD.

OUR SEMI-CENTENNIAL ISSUE.—Judging from the many congratulatory letters at hand respecting our Semi-Centennial number, our labor has not been in vain. We have on hand 600 extra copies of it, which will be mailed to any address on receipt of order therefor. We think we make no mistake in saying that the larger companies throughout the country would be doing a good thing to their under-officers by furnishing each one a copy thereof, and make the suggestion in the surety that it will be acted upon favorably and promptly.

ITEMS AFFECTING GAS SUPPLY IN THE PROPOSED BUILDING CODE, NEW YORK CITY.—Another instance of hasty, not half-digested legislation is presented in the proposed "Building Code" for this great city as recently adopted by the Board of Aldermen, which mess is now before the Mayor for his approval or rejection. Much has been said in the daily press concerning the various materials which may be used in fireproof construction, and but little on another feature which is of vital importance; in that the interpreting of the code will be left to five officials appointed by as many Borough Presidents! And each of these has authority in a separate Borough. An instance of the danger of such legislation is well exemplified in the State law on "Ventilation," whereof the interpretation as made by the Factory Inspector is that 1 cubic foot of gas vitiates the atmosphere to the like degree that would be occasioned by the exhalations from one active adult. This at any rate would not go in certain sections of the city—the old Fourth and Seventh wards, for instance; but in other sections the balance would seem odious. Unfortunately we have an ever-present temptation to cater, if not to pander, to popular clamor in the attitude of our public servants, whose efforts certainly once in a while, to make the periods the least possible as to length, are devoted rather to the managing than to the supervising of certain public utilities. That portion of the matter in-the-McClellan stage of the proposed code which affects the supply and use of gas, is especially notable on the score of that which is left unsaid, rather than that which it specifies and directs shall be done. For instance, there are no restrictions as to the quality of material, the size or the methods for installing and testing piping, etc. As an example, it is positively directed that all gas ranges *must* be connected to flues, seemingly irrespective of whether or not such connections will conduce to explosions due to back drafts, and the like. Further, Article I., Section 137, reads thus: "When a kitchen range is placed from 6 to 12 inches from a wood stud partition, the partition shall be covered

with metal from the floor to a height of not less than 3 feet higher than the range; if the range is within 6 inches of the partition the studs shall be cut away and framed 3 feet higher and 1 foot wider than the range, and the space in the partition shall be filled with bricks or other approved incombustible material." It is presumed that the foregoing is directed entirely at ranges in which solid fuel is to be used; but any inspector could easily on the face of the wording declare that it referred to gas ranges as well. Another example of doubtful meaning as to applicability lies in Article III., of the same section. This states that a range equipped with legs should be handled or set in such and such manner. All through the "rules and regulations" ambiguity to a decidedly too often measure prevails.

CURRENT MENTION.—

A Great Office Structure.—"C.," writing to us from Chicago, under a date that is pretty well back just now, forwards the following interesting details respecting progress in the construction of the great new home that is being constructed for the Peoples' Gas, Light and Coke Company of that city: The great steel frame of the new building being constructed for the Peoples Gas Light & Coke Company, and weighing 10,000 tons, is resting upon 99 concrete caissons, capable of sustaining 56,000 pounds per square foot. These caissons are not being sunk under air pressure, as is often done with comparable conditions, under which other buildings of its magnitude are erected. The earth surrounding the shaft of these caissons during excavation was held in place with lagging and steel rings, drums being used only in extreme cases where pressure as great as 10,000 pounds per lineal foot is exerted upon the caisson excavations by other buildings in immediate proximity. It is interesting to know that these caissons, on which the great load of 28 tons per square foot is imposed, do not extend down to rock. On account of the conditions of the ground encountered along the lake front, it was not thought advisable to try to go beneath the strata of hard pan found about 70 feet below datum in this location, so that the bottom bell of the caissons, which is about 14 feet in diameter, is resting in hard clay only. The average diameter of a caisson shaft is about 6 feet with 2 bells, one at the extreme bottom of the shaft, and an upper bell 15 feet from the bottom. Soft, blue clay was found down to within 60 feet below datum. Gravel was only found in a strata 8 inches through below this soft blue clay. Then a strata of hard pan was encountered which broke through into soft, blue clay again. Below this, at between 65 and 70 feet, good hard pan was found into which the bottom bell was excavated. At about 80 to 85 feet below datum, we would have in all probability gone into quicksand, which means disaster to caisson work, unless being excavated under air pressure, and, even under such conditions, air pressure means tedious and expensive work, and usually time is the essence of importance. No allowance is being made for settlement or shrinkage of the caissons, the steel shoes at the top of the caissons into which the columns rest being set accurately in place. On some previous work executed in the same way, the shoes have been set high and are yet at the same level, no shrinkage or settlement having taken place. On account of the soft quality of the clay, which was gone through almost the whole length of the shaft, the lagging and steel rings were left in place. The structure is being erected in 2 sections, the south 52 feet being occupied by the Gas Company while the north 145 feet is under construction. An interesting feature of this fact is the manner in which the south section was held up during the time the caissons were being sunk directly beneath its foundations. It was at first thought necessary to put the walls of the south sections on jacks or needle pins, but this would have been very inconvenient to the Gas Company on account of its heating system and elevator machinery in the basement. After some consideration, it was decided to bulkhead the two rows of caissons directly next to the section occupied by the Gas Company as the shafts were excavated. Drums were put in all the way down in all directions, alternately, so that buckets could be hoisted and lowered and the work proceed. The excavation was carried on under these conditions and the concrete put in, the drums being taken out as the shaft was filled. In this manner the pressure, exerted by the load of the occupied building against these shafts, was equalized by the drums, and the work was carried on with almost as great rapidity as the ordinary work and without any inconvenience to the occupants of the building. There was some slight settlement in the building. The building is to be 20 stories in height, with a basement and sub-basement. One hundred and ninety-six feet in Michigan avenue and 171 feet in Adams street, facing the lake front which, in a short time, will undoubtedly be one of the greatest boulevards in the world. The building will contain about 650,000 square feet of space. Up to the fourth floor, the exterior will be polished granite with 18 huge monolithic granite columns, weighing about 30 tons each. These columns are on both Michigan avenue and Adams street. Above the fourth floor, will be terra cotta of a color to harmonize with the granite. In strict accord with the harmony and dignity of the exterior is the interior of the building. No expense has been spared in getting the most beautiful marble, bronze and wood. The pure white Pentelican marble of Greece has been selected, as has been East India mahogany for general use throughout the building. The structure is to be of the most modern fireproof construction of steel and burned clay tile. It is one of the first large public buildings to use the new shapes of steel milled by the Bethlehem steel mills. From 8 to 10 per cent. is saved in weight by the use of these shapes and the same safe loads obtained over the use of the standard shapes. Some anxiety has been felt about the loss of time which might be encountered on account of the lack of rivets in the column sections which the steel workers use in climbing about. Some jibes about the use of rope ladders, etc., have been made, but the new shapes seem to go up equally with as much rapidity as the standard ones.

THE Board of Directors of the Indianapolis Gas Company, voted on the 19th inst. to conform to the requirements of the 60-cent gas law, and instructed General Manager Graf to announce the uniform rate of 60 cents per 1,000 as applying to all consumers. Bills rendered August 1st will be on a basis of 60 cents. This action was taken in consequence of the refusal of Judge Anderson to grant a temporary injunction against the enforcement of the law. This should bring joy to the dwellers in the camp of the warriors of the opposition movement. The projeetors and backers of the Citizens brigade, we imagine did not look for such hot shot from the batteries of their friends—the legislators!

THE annual outing of the H. Mueller Manufacturing Company will be held at Miller's Park, Bloomington, Ills., the 31st inst. How dry I am! How dry I am!!

SOME weeks ago the "advertising man" of the Jacksonville (Fla.) Gas Company, purchased several thousand palm leaf fans, printed on them in bold type, the words, "Keep Cool: Cook with Gas," and then distributed amongst the churches and other places where many congregate. As our informant adds, we "Got the answer," as the inclosed clipping shows. The clipping carried "these few lines," which were printed in the Jacksonville *Evening Metropolis*, under the caption of "The Gospel and Gas,' signed, Mr. R. J. McClinstock:

"God is a Spirit was our beloved pastor's text,
There we were diverted and lost what he said next.
He picked up a palm leaf fan, the weather being warm,
And fanned himself therewith. That wasn't any harm,
But the advertising mania has come to such a pass
That printed on the fan was 'Keep Cool—Cook with Gas.'"

I declare it is provoking when we seek to rise
Above the cares of earth to mansions in the skies,
To be brought back so suddenly—reminded it is hot.
They can keep cool, who have the price. Those who have not
Would like to forget it Sundays; but we can't, alas!
For the preacher's fan exhorts us, "Keep Cool—Cook with Gas,"

THE Warren syndicate of Boston, has purchased control of the Citizens Electric Lighting Company, of Oswego, N. Y. As the same people had previously purchased the Street-Wykes interest in the Peoples Gas and Electric Company of the named city, and had for some time owned the street railway company, a readjustment of the three utilities is being made. Mr. Charles H. Tenney will be the President of the consolidated enterprises.

Bureau of Information, The American Gas Institute.

Under the direction of the Institute it has been decreed: 1. That the privilege of submitting questions be limited to members of the Institute. 2. Neither the Board of Directors of this Institute, nor the Institute as a body, make themselves in any way responsible for the statements of fact or expressions of view given out by the Bureau of Information.

BUREAU OF INFORMATION, THE AMERICAN GAS INSTITUTE,
HEADQUARTERS, 1943 COMMERCIAL NATIONAL BANK BUILDING.
W. A. BAEHR, Chairman. CHICAGO, ILLS., July 19, 1909.

The Bureau of Information has received the following question:

Question No. 56.—"Do gas companies generally correct the gas made—that is, the gas metered by station meters at manufacturing stations—for drip water and oil collected from the distributing mains throughout the city? Also, is the gas made corrected for barometric pressure as temperature; and to what pressures and temperatures?"

Gas Illuminated Concrete Advertising Signs.

[Communicated by "R."]

Following the introduction of gas heated and illuminated fire grates and open fireplaces for halls, libraries, studies, reception rooms, dining rooms, parlors and offices, are the so-called illuminated gas light concrete letters and figures forming advertising and other kinds of signs. In the open fireplaces there are porous concrete logs which are heated and illuminated, with remarkable brilliancy and effect, with burning gas tips. In the illuminated sign composed of letters, shaped from cement and sand mixtures, the same principle is applied. The letters are not only employed for advertising purposes, but for various other purposes about stores, offices, houses, garages, stables, sales' departments in stores, hotels, etc. Furthermore, some elaborate figure effects are producible, and these are used advantageously for different purposes by the interested parties. The advent of the porous concrete form is responsible for much of the success of the illuminated letter and sign industry. Formerly the letters and shapes had to be designed from metal. Metal in sheets was used for soldered or riveted designs of letters, animals, scrolls, trees, salable goods, motors and the like; but the resulting effect was not what was desired. To make little jets of gas flames shoot forth through miniature perforations in sheet metal or cast metal frames and forms did not produce very novel or interesting subjects. The manner of creating the light effect was too plain to be seen and interest lagged; but when the concrete letter and pattern forms came out, it became possible to use porous combinations with mystifying results.

Like the porous log for open fireplace, which is illuminated and heated solely with gas flames, the letters of concrete are molded in forms constructed with wood or metal, as in Fig. 1. This design shows one-half or one side of the casting mold. The form of the letter, or whatever figure is required, is molded in the foundry sand just as any shape is produced, and tamping is done to harden the composition. The shape is readily acquired if the proper core is made. After the mold is once formed any number of concrete shapes can be cast, one following the other, just as concrete blocks are manufactured for building purposes. The concrete composition is of the ordinary mixture of Portland cement, sand and water. The component parts are varied in proportion with the view of getting the best results in the finished letter of molded shape. After the letter or form is molded, the flask is opened and the form removed. Next, the drilling of the series of fine gas flame holes begins. A fine-bore drill is employed for this service, just previous to the extreme drying out of the form, and while it is yet a little soft. Therefore, when the form is perforated, the rows of bores are as in Fig. 2. Then follow the pipe connections for carrying the gas from the main supply line through all of the letters and forms composing the combination.

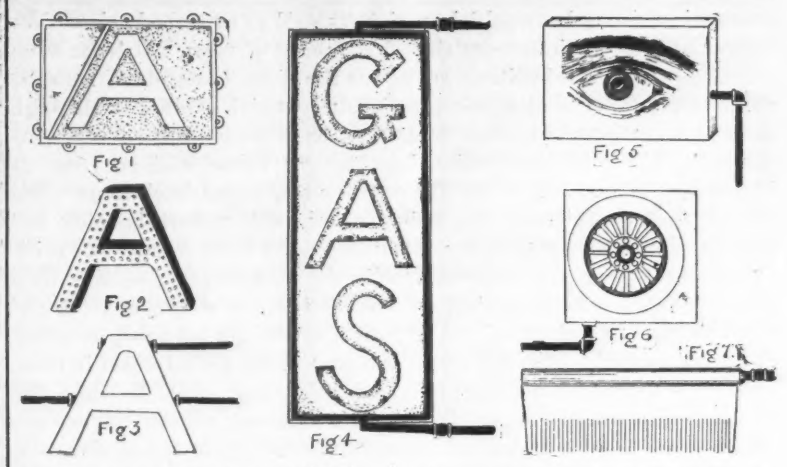
One process of connecting the pipes is shown in Fig. 3. The pipes not only carry the gas for illumination, but serve to support the letters in line and position. Then the end pipes are secured in a frame so as to support the line of letters wherever needed.

Sometimes the letters are molded as a part of the foundation of the sign, as in Fig. 4. In this case the lines of gas carrying pipes run along the back of the letter ground and cannot be seen from the front. The numerous little gas jets, which it is possible to burn on the perforated letter, make a very unique effect at night. Some of the signs are extremely large in size and are adjusted to roof tops of buildings in great cities. Then, again, the illuminated letters simply tell the way out, such as "Exit," or illuminate the sign "For fire use only," over pails of water arranged for fire emergencies. The night running of motor vehiclists has resulted in the establishing of many motorway repair shops, garages and places where motorists can get food and shelter at night. These establishments are lighted with illuminated signs to attract the observation of the speeding motor enthusiasts.

Furnishing goods stores, jewelery stores and other commercial places are introducing forms of illuminated gas, gasoline, and electrical signs of novel and striking pattern, and always with good results, as we seldom see the sign removed when once put up.

Some of the forms possible to create with the concrete porous composition are next shown. Fig. 5 illustrates the form of an eye, utilized by an optician, who had the eye pupil so designed that a very natural brilliancy shot forth through the agency of a gas light passing through tinted mica. The effect is certainly interesting.

Then a motor vehicle establishment has a gas illuminated concrete wheel, as in Fig. 6. A druggist showing a show window full of fine combs has a large comb cast in concrete, as in Fig. 7. This concrete



comb is hung in the exhibition window and illuminated to the degree of lighting the window and the sidewalk through the plate front. Many kindred effects are possible with the fine little jets of gas and concrete letter and form combinations.

PROCEEDINGS, FIFTH ANNUAL MEETING, IOWA DISTRICT GAS ASSOCIATION.

HELD AT ELLIS HOTEL, WATERLOO, IOWA, JUNE 23, 24 AND 25, 1909.

FIRST DAY, MORNING SESSION, WEDNESDAY, JUNE 23, 1909.

The meeting was called to order by Mr. Geo. H. Waring, First Vice-President. The following members were in attendance:

ROLL CALL.

Averill, A. T.	Forest, G. S.	Maynard, H. B.
Asendorf, C.	Fair, C. W.	Pratt, E. G.
Addy, W. B.	Fritsch, C. H.	Potter, H. W.
Ashton, A. J.	Forbes, J. W.	Parker, J. F.
Burt, A.	Grey, J. C.	Polk, R. W.
Bebb, J. F.	Green, G. A.	Parker, R. M.
Borden, A. W.	Gates, F. J.	Parkhill, B. F.
Bertke, W. J.	Goodale, J. C. Jr.,	Roper, G.
Benedict, C. M.	Haines, J.	Rohn, O.
Blackwell, H. C.	Houck, O.	Stirensky, J.
Clary, E. D.	Hutchinson, W. P.	Suchomel, T.
Chubb, C. N.	Innes, J. A.	Schall, H. D.
Clabaugh, C. W.	Jones, C. D.	Smyley, W.
Crawford, T.	Kellogg, L. L.	Shacklette, R.
Crain, C. E.	Kellum, B. J.	Seeman, S. L.
Crady, E.	Kidder, F. A.	Tenney, C. I.
Cressler, G. H.	Lamb, G. F.	Tenney, D. C.
Clausen, W. F.	Lawlor, R. H.	Vincent, G. I.
Cunningham, W. A.	Moses, F. D.	Whitney, M. C.
Curfman, F. G.	Mettler, L. B.	Waring, G. H.
Davis, W. E.	Maple, F.	Wickham, L.
Dungan, J. G.	Martin, E. H.	Walker, E. M.
Dunkle, C. C.	Mead, J. J.	Zahm, A. W.

INTRODUCING MAYOR DOTY.

The President—In the absence of Mr. Averill, who has been delayed by a railroad washout, I have great pleasure in introducing the Hon. R. A. Doty, Mayor of Waterloo, who will address you.

ADDRESS OF THE MAYOR.

Mr. President and gentlemen of the Iowa District Gas Association: It affords me considerable pleasure to have the honor of saying a few words to you. I always like to preface any remarks I make by a statement of inability, lack of time to prepare, etc., so I will make it along the same line you usually hear. Of course, I understand, as well as you do, that these things are mere matters of form and formality handed down from time immemorial at all gatherings; but as you must be formally welcomed by the executive of the community, therefore, I assure you with all candor I won't attempt to make any address to you, but just to carry out the usual form, and only make a few remarks.

I am very much gratified to know that we have the honor of entertaining so distinguished an association as this which you gentlemen represent. I did not know anything about your convention until a few days ago, and was somewhat surprised to learn it was a tri-State organization. In so far as in the three States we possibly have larger and better representative cities, I sort of figured out the same would apply to these noble gas men if we got them here. However, we are very much pleased to have you here, gentlemen, and from several standpoints. First, from the standpoint of being our guests. Now we do actually appreciate having guests among us at any time. Of

course, in this we have selfish motives as well as everybody else. We appreciate conventions from the selfish point of view, not from what we may gather in a business sense for the time being, but from the point of publicity over the scope of country which reaches us through these conventions, showing what has been accomplished "in our midst." We hope that which has been of value will go from us in the way of publicity over the country and come back to us. We expect that the visitors, on going away, will naturally pick out flaws and mistakes which will naturally do us some harm; but criticism is one of the great advantages in the progress of building up a town or business or anything we have. If we were never criticised until we got through running the gamut, we would probably overlook our mistakes and fall in failure. However, if we get criticism in time, and go on, we will be able to mend our ways and overcome the things which might ultimately make our failure. Of our city we are frank to say we are proud, and boastful probably, of the attainments gained in the past few years. I think possibly we are somewhat unusual in many respects in comparison to many other cities, in so far as that which we have attained in the way of progress or improvement has been done in the short space of 10 years; growing out from a small village in that time to what we term the nucleus of a city. Of course, many circumstances have all contributed to make it possible to do what we have done, and before going further I wish right at this point to give credit to a member of your Association for some of our great advancements to acknowledge the assistance given us by him in the way of progressing. I believe it is a fact that any municipality must look to her public utility corporations largely for advancement. I have noted two different kinds of mnagements – possibly more—in public utility plants. Some have gone in and taken hold of their plants, after the franchise has been awarded, with the seeming intent to bleed every dollar they can stand to the limit of the franchise, figuring they are never going to get another one. In consequence every citizen of the community is in arms, simply waiting for the expiration of the franchise to get a dig at its holders. The other sort realize, on the very instant of their being granted the franchise, they must look to the people for existence; and, therefore, by courteous treatment, fair business methods, going a little further, possibly, than necessary in legitimate business matters in order to reach the pleasant strain of business life, thus creating satisfaction among its patrons that not only makes the owners money but creates a desire upon the part of the citizens to continue that organization. I think the greatest mistake that any utility plant can make is to get the ill-will of a community. We all recognize that a corporation is the mark for every person in the land. That becomes so down through the age. In some instances, no doubt, it is coming to them justly and honestly, but we should not criticise all corporations for the mistakes some have made. I believe the time is at hand when utility plants and corporations must manage their trading from a higher plane of co-operation with the people than ever before, if they wish to exist. We know that the municipal ownership bubble is afloat in the air all over the country, not only in Iowa but in the entire world, with a degree of success in some places, and in others a failure. Notwithstanding the idea is rampant in the minds of the people that the public utility corporation is one of greed only, once in a while we see an instance where the opposite is true. We have instances in Iowa, likewise in other States, possibly, where the people are much exercised over the management of a certain public utility plant in their midst, devising every means possible to oust it from the community, and its opponents will go to extremes for the purpose of taking over the plant for the municipality, not looking to the value of the plant itself, but for the simple reason of getting out the undesirable corporation. Again, we find side-by-side with it another public utility corporation operating a plant very successfully and very close to the people. This only goes to prove it is all up to management. It is possible to operate in any community with entire satisfaction to the people and to yourselves. I believe the people are perfectly willing to give you fair and equitable rates provided you will treat them fairly. We must not forget a public utility franchise is not a private property. Gentlemen, I didn t have any intention of coming here to try to tell you people your business, but inasmuch as nothing else came into my mind I had to go into it. I suppose you have a long programme outlined of business, with papers and discussions, which you came here largely to hear, enumerating ideas and presenting experiences for the benefit of the future. Therefore I am not going to tire you any further with what few ragged remarks I may make. I simply wish to convey to you, in behalf of the citizens of this city, the hospitality which we may be able to extend to you in every respect from the muicipality at large and from each individual. I believe I can safely say that every citizen and every corporation, and our city itself, will show you their gratitude in having you in our midst in every way that they may possibly be able to extend it. I suppose the local committees have made arrangements for entertaining you while here, and particularly so if our friend Mr. Maynard is on the committee. I have seen him out-of-town once or twice and I know about how he acts. I hope you will have a very good meeting while you are here with us, and the main thing I wish to say in conclusion is, that, in the future, if you should go begging for a place to meet, don't forget that Waterloo has always an open invitation. I thank you. [Applause.]

Response of Mr. Haines.

The Vice-President—I will ask Mr. Jansen Haines to rsspond to Mr. Doty's words of welcome.

Mr. Haines—Mr. President, Mr. Doty: On behalf of the Iowa District Gas Association and its officers and members I wish to thank you very kindly for this welcome to your city of Waterloo, and I desire to emphasize, with the kindly spirit of the invitation, the remarks you have just made in regard to our business. I think I have listened to very few discussions on the business that have been more to the point than the one which we have just heard, and I feel that every member of this Association should take those remarks to heart and think them over, because they come from the mind of a man who has given the question consideration, and who also knows what he talks about. The two classes of public utility management referred to are apparent to us every day, and while we very often have the question of bad management brought very rudely to our minds, it is a great pleasure to listen to someone who appreciates both sides of the question, and to get those words of encouragement from your Honor in regard to our desire—the desire on the part of the members of this Association and others in our business who really endeavor to give good service to patrons. The encouragement that your remarks give us is very sustaining. I want to thank you again for your kind invitation to our Association, extending the hospitality of this city and its good people to the members of this Association. I want to assure you that, when we break up our convention and return to our homes, we will carry Waterloo and its memories to our friends and in our hearts the rest of our lives. [Applause.]

On motion of Mr. Roper a vote of thanks was passed to the Mayor for his welcoming remarks.

(To be Continued.)

[Continued from Page 109.]

EIGHTH ANNUAL CONVENTION, WISCONSIN GAS ASSOCIATION.

Held at the Hotel Pfister, Milwaukee, May 12-13, 1909.

First Day—Afternoon Session.

The President—Some person kindly sent here a number of copies of "The Voter," which contains a very interesting article on "Watered Stock," by Mr. Rufus C. Dawes. I commend it to your careful attention. It certainly is very interesting to have gentlemen volunteer the results of their deep study and voluntarily give them to us. We have had here an interchange of thought, opinions, knowledge and information of value, and that really is the sort of material which we are expecting at our various meetings. We wish to look over past results and keep up-to-date, exchanging our thoughts freely, giving them and getting them. We will reassemble to-morrow morning at 10 o'clock, and on adjournment we will go to Racine by special cars. Our Secretary has arranged to give us a good time.

A Special Invitation.

Through Mr. Glass the Milwaukee Gas Light Company extended an invitation to the members to visit the offices of the Milwaukee Gas Light Company and its exhibits, including meter shop, etc.

Mr. Harmon –Among the interesting things at the office is an imported, high-pressure lamp, which has been put in position for your examination.

The President—It gives 50 candles to the foot. Think of that!

Mr. Howard—I would like an expression respecting what the members think of the advisability of putting in curb-cocks on the services, as water companies do. I got up a set of piping specifications and, thinking I had it all fixed up, turned it into the Council. They came back on us with the reply that they would pass the specifications provided we put curb-cocks in every service. They stated that, at Fond

du Lac, a disastrous fire had occurred which was intensified to a great extent through lack of devices for shutting off the gas. I would like to know if that proposition has come up and what the members intend to do along this line in the future.

Mr. Kimball—Who was the gentleman that reported the Fond du Lac Company was not able to shut off the gas. Was it the Mayor?

Mr. Howard—Yes; it was our Mayor. I was not throwing any stones at Fond du Lac, but such was the instance cited to me.

Mr. Kimball—We have curb-cocks on some services. Recently a boiler exploded in a paint factory in which was a large valve, but it did not avail us very much, as we were unable to get to it. The walls caved in on the valve, and the fire was so intense that you could not get within 100 feet of it until everything had practically burned out. Then we had to clay up the opening, and, 2 or 3 hours later, dig the walls away. Under these conditions the curb-cock might as well have somewhere else.

The President—Do you want to go into the question of advisability of using curb-cocks on gas services? Is there anyone present who is using a system of curb-cocks on service. If there is we would like to hear from him.

Mr. Harmon—I know the question came up with us as to the advisability of continuing curb-cocks, and in Milwaukee we have them everywhere. We use a heavy brass service cock in the downtown districts where there are hollow sidewalks or spaces under the sidewalk. A special shutoff cock with cast iron cover is used, made so the fire department can, with a stroke of an axe, break the cover and shut off the gas from the outside without entering the building. That is in the downtown districts only, where we have hollow sidewalks.

The President—Can the cocks be closed easily?

Mr. Harmon—Occasionally we hear from the street department that, in cases where the service box covers are lost by boys carrying them off, or getting them misplaced, etc., the boxes are found filled with gravel, etc.; but such are isolated cases.

The President—Do you inspect the boxes regularly?

Mr. Harmon—Unless there is occasion to turn off the gas in the street, I do not believe a systematic inspection is made of the boxes, but we are continuing the practice of putting them in.

Mr. Eastman—An ordinance before the Manitowoc Council brought in by the Fire Chief, requests the Gas Company to establish cocks on all services. We talked the question over with him, and finally got him to admit that he only cared for the service cock on the large services downtown, from 1½ inches and up, and as we do not have larger than 2 inches at present, we were thinking of putting shutoffs on the 1½ and 2-inch services now in use in the downtown districts.

Mr. Harmon—My impression is, there is a city ordinance necessitating the use of such cocks in Milwaukee.

The President—Have we anyone else who is systematically using curb-cocks for gas service?

Mr. Luenberger—The time will come when the question will be asked whether the service inside of the lot line belongs to the gas company or not, and whether the gas company has a right to shut off the gas there. Now the gas man shuts the gas off at the curb, and there is no argument about it. It is very good protection against fire and non-payment also; although boxes and covers are often abused, especially when sodding is done. They run sod over the boxes and cover them up, so it is difficult to locate the boxes.

A Member—Do you find that these cocks can be turned off always; that they do not get set?

Mr, Luenberger—Very few get set. The main trouble is in the boxes being broken and filled up, then we have to send a man out to dig. The key we use is very strong. We use a heavy cast iron cock, with a brass plug and washer.

Mr. Kimball—Does not the curb-cock fail at the neck? Suppose, in digging a sewer, for instance, your service is undermined, or that the city people come along with a steam roller and run over your curb-cock. I have noticed several such cases where the curb-cock breaks right off at the neck. It seems to be weak there.

Mr. Luenberger—Our curb-cocks really set inside the curb between the curb and the sidewalk, or in the sidewalk itself.

Mr. Kimball—If there is a heavy strain and the curb-cock is weak it will break, no matter whether it is near the house or at the curb.

The President—In the early days of gas, 100 years ago, when I was a boy [laughter], gas service-cocks were the rule everywhere; but they found that they were of no practical use. They are not used once in a thousand times. A large percentage of the cocks could not be used anyway, because they get set after being in place for years-and-years, and it was found ultimately that, instead of being of value they were a delusion and a snare, speaking broadly. The small services give no great trouble to the fire department. The blaze is not serious, as a rule, and the fire department can control and regulate it. In a pinch they can dig down in the winter time, then you must face the music. Excepting in the downtown districts, I think there has never been any gas man who said it was necessary to put a service-cock on an ordinary house. It is not a new question. It is a very old one and belongs to the start of the business. I think the fire authorities should have the matter under control in large buildings, and should have the cocks examined from time-to-time to see that they can be worked. In a building like this hotel, for instance, you must have a valve of a considerable size, and if you do not move your valves once in a while they will stick. It is an old story, we understand it. I do not think you are going to have regulations calling for the universal use of stop-cocks; but reasonable things we are always ready to do.

Mr. Jones—Something like 5 or 6 years ago our high school burned, and I understand that the chief of the fire department requested the company to put in curb-cocks in the downtown business streets, with large buildings, which was done. Something like 1½ years ago we had a bit of an explosion in Appleton and were called by 'phone and hurried down and tried to shut-off the gas in the building. We had a Peerless box and a brass curb-cock of the Minneapolis pattern. On opening up the cover we found the thing blocked with ice, so that we could not use it anyhow. A similar occurrence happened at a small theater there. We wanted to shut off the gas (there was an odor of gas in the house) and found the box filled with ice. I do not think much of curb-cocks. Just as you say, if they are allowed to stand a few years without use they are liable to set and you cannot move them.

The Secretery—I think if the Appleton Company had had a Buffalo pattern service-box, not a part of the service cock, so that any water would readily drain into ground instead of remaining in the box to freeze, the difficulties described by Mr. Jones would not have occurred. We put boxes and cocks throughout the entire city of Racine and are well satisfied with the system. This policy was instituted 10 years ago; and think it is highly advantageous to spend a small sum. say $1.25, for each service in order to be able to shut the service off for one reason or another, when it is desirable to do so. At Saginaw, Mich., some years ago, there was a disastrous fire, entailing a loss of about $1,000,000 of property, more than a mile of the residence district being devastated. We were able at that time to shut off a great many services and thereby save loss of gas and consequent damage. In laying our services we put in the cock, finish up the service and put on the tee and meter-riser before we put on the box, so we are pretty certain the cock is in place and upright before the box is put on to cover it. After that is done there is no liability to trouble in turning.

Mr. Kimball—In cold weather don't those cocks stick so that they cannot be turned?

The Secretary—I have not had that experience. We use a brass plug and mesh in an iron body, and there is no chance for serious sticking.

Mr. Jones—We put curb-cocks on all our high pressure services in the fourth ward.

A recess to 10 A.M., same place, next day, was ordered.

Second Day—Morning Session.

The President—The Secretary desires me to call your attention to the trolley party ride at 2 o'clock. The car will be at the corner of Mason and Jefferson streets just back of the hotel here, at 2 o'clock sharp. I will now ask Mr. G. H. Armstrong, of Waukegan, Ills., to read his paper on

DISPLAY WINDOWS AND SHOWROOMS FOR GAS COMPANIES.

In presenting this paper for your consideration I have used our own experience as a base, feeling that in this way I can be more to the point and more concise than were I to give my personal views.

Last fall we remodeled our downtown office at Waukegan, creating a salesroom, with samples of all merchandise carried (stoves excepted). These samples are numbered with trade number and selling price, and the corresponding stock in the storeroom is similarly labeled, so that, in the absence of the regular floor salesman, no one, however inexperienced, can make a mistake in taking an order or in making a cash sale.

This general plan we have caried to the other offices as well. Suspended from the ceiling of the salesroom, as shown in Fig. 1, is our

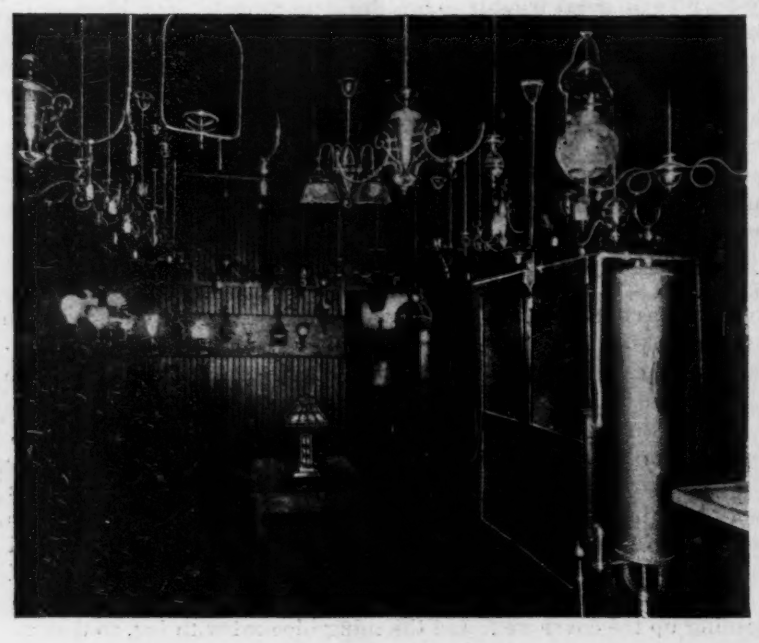


Fig. 1.

line of fixtures with the trade numbers plainly marked, while the case at the right contains glassware and small merchandise. At the left of the salesroom you will please note the display of brackets, fitted with different glassware. We call your attention to the fact that no pipe is exposed. This makes an exceptionally neat wall, and not only adds to the general effect, but gives us a chance to show those of the public, who know nothing of concealed piping, how their homes can be supplied with gas light without marring the walls with a lot of unsightly pipe. Our arrangement in this case was simply to bring the board to which the brackets are fastened about 1½ inches from the wall.

A feature of the salesroom worthy of note is that it was designed to give the best effect of the light. The room is ceiled overhead, so that in showing glassware the effect is very much the same as though shown at night. Of course we have not entirely darkened the room so as to give the full night effect; but nearly so. Thus, in purchasing, the customer can get practically the full color and general appearance, which he could not were the glassware shown in full daylight.

In the main office, as shown in Fig. 2, is our range display room,

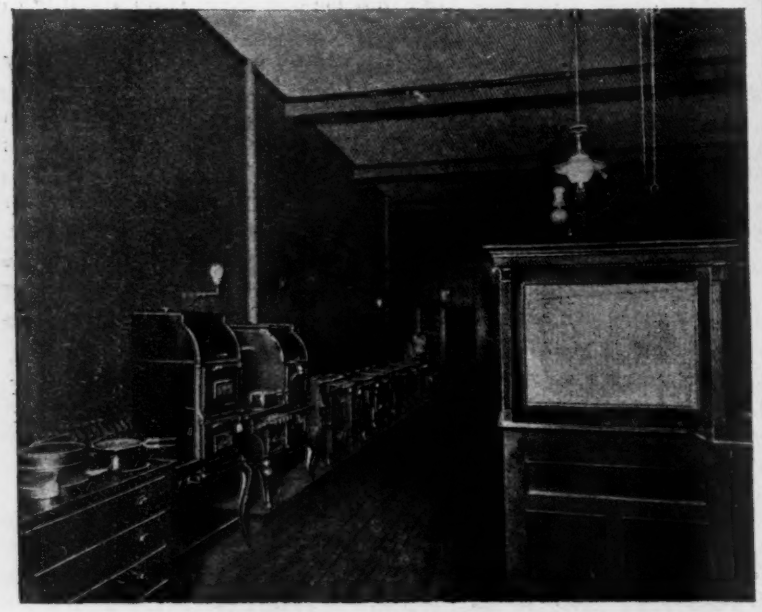


Fig. 2.

including plates, room heaters and general stove utensils. Opposite our range display is the office working force, with the floor salesman so situated that our customers can be taken care of without annoying anyone at their work. Our window we have made into one of the best solicitors we have, if we may judge from the number of people who stop to inspect it, and also from the number who call for this or that article on display. The window is changed regularly every Friday evening, which permits a new display for the Saturday shoppers and, as well, furnishes food for thought for those who take time to look into it.

Fig. 3 shows a view of the window from the street, with a display of stoves and hardware.

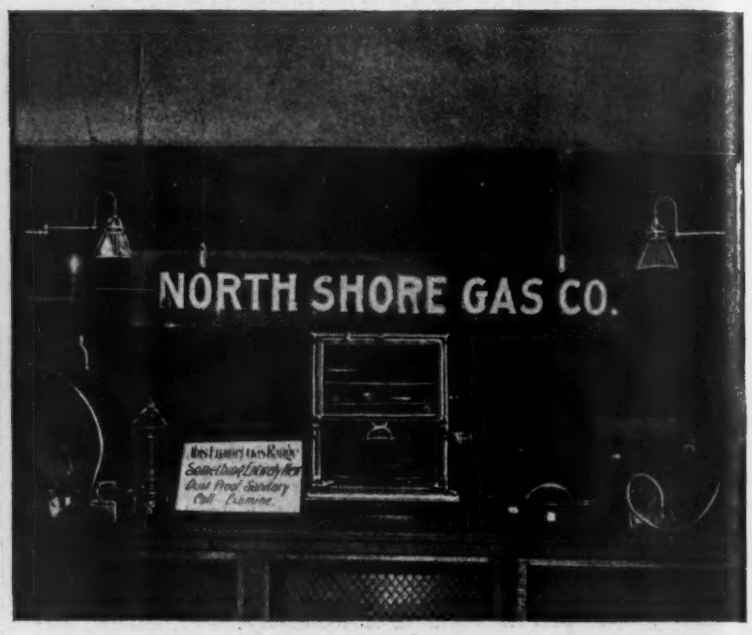


Fig. 3.

Fig. 4 shows the window taken from the interior—a glassware display—with the effect of the Reflex lights, to which we will now refer.

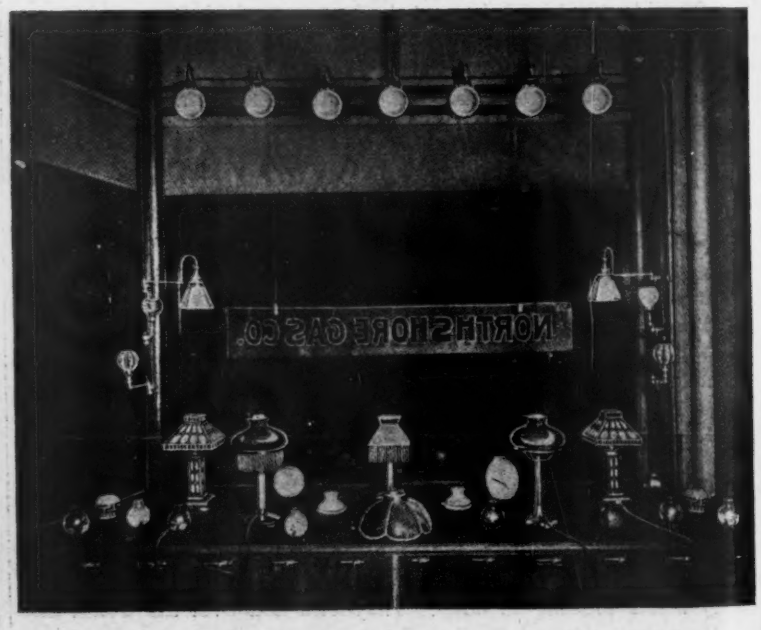


Fig. 4.

In order to offer our customers the latest and most approved method of window lighting, we installed a series of Welsbach Reflex lights, fitted with angle shades, and we feel safe in saying that we have the brightest window in town, referring, of course, to the windows that are lighted by other than gas. These lights are operated by one general supply pipe and are shut off by one cock. To this cock we have attached an ordinary alarm clock, so that, in setting at any hour, we know the lights will be shut off, just as much as we depend on the alarm clock to wake us in the morning. In Waukegan, where windows are lighted by electricity, a man is employed to go around and shut off the lights. We do not have to do this. We set the clock, go to our homes and know to a reasonable certainty that the lights will be shut off at the time set. Thus, we regulate our town time of burning the lights and also the amount of gas to be used. Where there is some special function on in town we find it good business to extend the time that the lights are to run.

Our installation was made rather late in the season, but we feel we have received our share of the window lighting, taking this fact into consideration. With the opening of Fall this year, we anticipate a material increase in this line of business. We have many advantages over the electric people in the way of cost and of maintenance and installation, compared to the tungsten.

With this description of our Waukegan office, we will call your attention to the work of our branches:

Winnetka, our southernmost office, is situated about 19½ miles to the south, while Libertyville lies 12 miles to the west, both towns and the intermediate territory being supplied from the central station at Waukegan. While we follow a general policy in respect to sales throughout our organization, yet, to a certain extent, each one of our four branch offices is operated independently in this regard, as the conditions in each territory differ radically from the others, so that a rigid policy would not only be impractical but harmful to the best interest of our Company.

Turning to the Libertyville office, Fig. 5, shows the window with

Fig. 5.

display, and Fig. 6 the salesroom. Briefly, Libertyville is a small

Fig. 6.

inland town of approximately 2,100 people. The community is one of considerable wealth, being in the center of a very prosperous farming region. Out of this population we have about 400 meters set and are daily adding to the meters in use. In addition to the personal efforts of the local manager, our window is a big business getter, and we are to-day doing more in the higher grades of gas appliances than ever before.

The district covered by Lake Forest office embraces the territory on, from the southern limits of Waukegan, including Lake Bluff on the north, to the extreme limits of Lake Forest on the south. In all about 6 miles.

Lake Forest is one of the best towns in our organization, both for the sale of appliances and as to the consumption of gas. The residents are not only liberal with the use of gas, but in buying appliances select only the best and highest grades. The population of Lake Forest is about 4,000, including Lake Bluff. Meters set at Lake Forest proper number 521, and Lake Bluff 197, or 718 in all for this territory. We show this distinction, as Lake Bluff is largely a summer town, so that the meters in use are largely increased during that season, but the figures above are normal. Fig. 7 shows the Lake Forest window from the street.

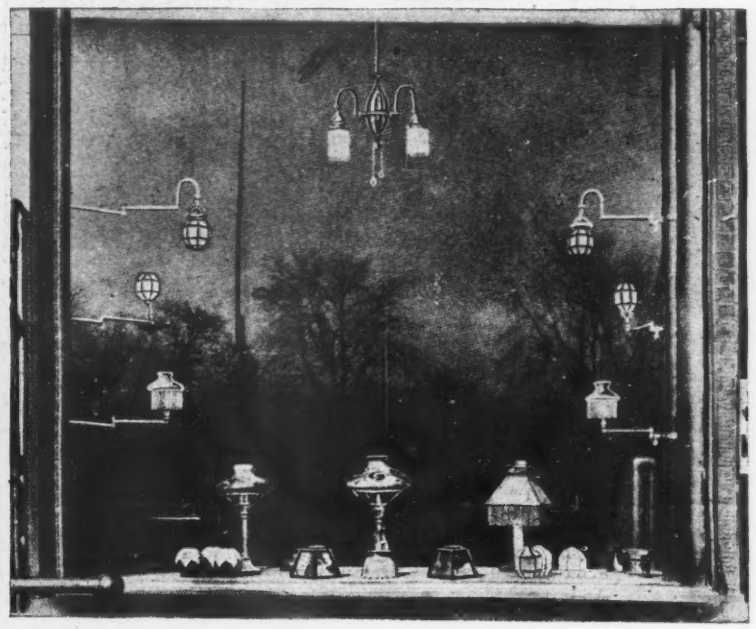


Fig. 7.

The Highland Park office picks up the thread at the limits of Lake Forest, taking in the towns of Fort Sheridan and Highwood on the north and Ravinia on the south. In all, this office governs about 5 miles. As you will please see from Fig. 8, our office building is

Fig. 8.

rather unique, but it fits in admirably with the local conditions. Highland Park is strictly a residence town, with about 5,000 people to be supplied in this territory. Out of this, we have in use to-day 1,032 meters, and are installing meters daily. At Highland Park we have two emergency storage tanks of about 6,000 feet capacity. We do not have the advantage of window display at this office, and the work of the window has to be carried on a little more vigorously by those in charge.

Our southernmost office is at Winnetka, that territory commencing at Ravinia, taking in Glencoe and on to Kenilworth on the south, being about 6 miles. Our office at Winnetka is in the main business

block, and from Fig. 9 you will see that it is the neatest window,

Fig. 9.

architecturally, of the group. Our office at Winnetka was only opened last August, as Winnetka was without gas prior to our laying mains. We commenced the work of main laying in August last, and by the first of December had succeeded in putting in 14 miles and setting 300 meters. In addition to this there were 50 additional services run, preparatory to setting meters this spring. By July we expect to have at least a record of 500 meters.

The reason that Winnetka has been without gas so long is that a great many people in the town favored municipal ownership of the gas plant, as their electric lighting system is a municipal proposition. After a long agitation this question was put to a vote, with the result that the municipal idea was abandoned. Winnetka is an old suburb, and has had but little growth until the past few years, when wealthy Chicago people hit upon the place as ideal for country homes. With this came the desire for gas. As can be said of all the towns in our cluster, Winnetka is one of great wealth. While our window and display room are bringing in business, yet the window has not been tested to its full capacity, as the town just having been opened up, business comes to us. By this, we mean that we do not know fully what force the window will play in Winnetka, as it does in the other towns, nor can we determine this until the rush of the season is over and we come into competition with the electric lights. We are not worrying, however, but that the window will contribute its share in this direction.

In conclusion, from our experience too much care cannot be expended on the window and salesroom. By all means make both attractive. Go further. Arrange your office so that your customers may feel that if they want to visit for a few moments they can step into the "Gas Office," knowing they will not interfere with anyone or be importuned to buy. Make them feel that they can come in and look at fixtures or glassware, whether they buy or not. Only a month ago a man came into our Waukegan office to see what we had. He was undecided whether to use electricity or gas. He looked our stock over and left. Later he came in with his wife and they both looked things over. Please understand that we did not say one word against the electric (nor would we permit this). We let the man do his own thinking. We did, however, show him the power of gas and its economy, and so a third time he called, and now has picked out a good bill of fixtures, and we are ordering a special set of brackets, which he seemed to prefer to those in stock. It is needless to say he bought a range as well. This is one of many cases, but we cite it as being the one freshest in our minds. In short, make your customers feel welcome. This is hard to do with some people we come in contact with, but is there one of us here who does not have to swallow a bitter pill at times?

One thing more: Never let a salesman, for the sake of a sale, talk a customer into buying something that the salesman knows or feels will not give satisfaction. Better by far that the time be wasted and the man go without buying. We know that one dissatisfied customer will do more harm than 200 satisfied customers will do good. This is not only in the line of the gas business, but in all lines, and to a certain extent is worn threadbare; but we gas people can take this very closely to ourselves, just the same, being as we are a public utility corporation.

Discussion.

The President—Gentlemen, this very excellent paper I am sure is one of deep interest to us all. It underlies much of our business. The question of selling fixtures certainly must precede the sale of gas. Therefore, we should have an extended discussion, especially on the part of those having special experience in that line. We should get a lot of information back-and-forth from one another that will be of great value to us all. I will call on Mr. Glass to start the discussion.

Mr. Glass—This subject is, in my estimation, of the utmost importance to all gas companies, and in connection with the window displays which form a very important part of our exhibits, we want to go still further. A window display of unattractive lighting apparatus had better be given up and left out of consideration entirely. We often hear it said that there is no use of talking gas for lighting; that electricity has it beaten to death, and we are only wasting our time. And I am sorry to say altogether too many gas men seem to have that idea. I do not believe in it. To the contrary, I believe the future for gas lighting is better than ever, notwithstanding the introduction of the tungsten lamp with its high efficiency. However, if we are to compete with that character of lighting, we must not only have fixtures of the like general beauty and convenience with electric fixtures, but we must have burners to go with them. The "fixture engineers," if we may so call them, have been more interested in developing electric fixtures than they have been in developing gas fixtures, for the reason that people seem to want electricity, they work along the lines of least resistance. Now, we want to stop that. We must exercise our own ingenuity and aid the fixture man in bringing out fixtures that will be just as attractive for gas as can be bought for electricity—fixtures that will be just as convenient in every way, and when that time comes then push your show windows and your exhibit rooms and get the business that properly belongs to you. I have talked with many fixture men about this, and they say, "Well, we can't afford to go into the development of high-grade gas fixtures. There is no demand for them. The gas companies won't sell them." One point that I want to bring out in particular is that, wherever you hear of a fixture concern making the attempt to bring out the right kind of fixtures, patronize that concern and order a sample from them, if you do not do any more, and I think you will find that your sample will call for additional orders. The U. G. I. Company, in Philadelphia, have been doing a great deal of work along the line indicated by this paper, and also in the lighting of show windows. I believe that in a great many cases we can very easily demonstrate our ability to light show windows much better than can possibly be done with electric lighting devices. But it requires special care. You must not go out in a haphazard way. The details must all be thought out carefully and given a great deal of study before effort is made to make the installation. I would like very much to have everyone connected with the gas business, not only those present, but others who are not here with us, bear in mind it is up to the gas men to show the manufacturers what we want and what we must have, and when that is done, and they bring out the right class of apparatus, I believe we will get what is properly coming to us. I would say, in connection with this, that I have here a book of illustrations of gas lighting in Philadelphia that I would like to pass around for the gentlemen to look at. I also have a catalogue of gas fixtures that came to me this morning. The manufacturers heard we were attempting to do something a little different from the ordinary line, and wrote they wanted me to see their work. I think they would appreciate having an application from all of you for their catalogues. They certainly have gone further than most manufacturers up to the present time in bringing out modern fixtures.

Mr. Armstrong—In connection with what Mr. Glass said, I might remark that our organization tries to follow out just the policy he has outlined. To illustrate some of the things that are being accomplished in the way of improved devices, I might call attention to the by-pass. I believe all of our boys always think gas and talk gas, as well as sell gas, and they try to find out all sorts of little ways of improvement to get ahead of electric light companies. In line with this we schemed out a by-pass for an upright light, a thing which was never done before. When our new business department was first organized we probably had five by-passes around the shop. Now we order them in 100 lots, and people say, "Why, they are just like electricity." All you have to do is to turn a button. Even the Welsbach people did not know about this by-pass matter. That is just in

line with the improvements that we can keep on making and go right ahead and compete with the electric people on.

Mr. Hulswit—The point that interests me most in Mr. Armstrong's paper is the idea of darkening the entire salesroom rather than darkening a separate small room. We experimented on a dark room in Laporte, and although we got a beautiful effect by building a separate dark room, and papering it very elaborately, and displaying perhaps our handsomest fixtures in the dark room, and having them all connected up, and having a by-pass arrangement so that we could throw on all the fixtures, thus securing a splendid effect, yet we found that the heat in the room was so excessive that people would want to get out of it in about 30 seconds after they went in. That could have been obviated, perhaps, by having a separate store, or perhaps an additional floor in your building, devoted to the purposes of a dark room. The plan was carried out in two or three other plants that I know of, and I think the same difficulty was encountered in each case, namely that there was too much heat from a small, separate, dark room, whereas the idea of darkening the entire office would give you a chance to display your fixtures in any position, or so as to take up any particular space that you have in your office that you wished to devote to fixtures.

Mr. Lloyd—We try to make it easy for people to get stuff. We look after the quality of mantles and try to do all kinds of jobs of house piping. We do all the house piping in the town, and in addition in one large drug store we keep a window going in addition to our own windows. We light the store with gas, and we light up these windows and they allow us to display our goods in payment for the lighting. We have a nice show window there. We also keep three solicitors out, and consider that is pretty good for a town of 11,000 people. We have a great deal of lighting there, although we have very hard competition from the electric company, that is selling current there as low as 4 cents a kw. on peak load, without any demand. They are not selling all current at that price, but are in certain places. So we do not know really what we are to meet when we go after lighting.

Mr. Kraft—I like the lounging room idea pretty well. An electric light company in the East has worked out the plan pretty well. The exhibit in the room is changed once a week. A heterogeneous mass of stuff is not shown to confuse people. They try to stick to one plan each week and claim they are getting very fine results with that scheme. I think it is a good idea.

Mr. Mason—One of the gentlemen spoke of his dark room getting hot. The simplest way out of that is to ventilate it. I do not see any occasion for its getting too hot then. Of course, any room closed in with gas will get hot; but if you put in a ventilator you can stay as long as you please without discomfort.

Mr. Morris—Last summer I visited several small towns in the southern part of the State where they are making gas in small gas plants, calling at the offices in the evening, and found in almost all cases no lights burning. The places were dark. In a town of about 40,000 inhabitants the gas company had a nice office, well arranged, in the central part of the city, and they had a number of arc lamps in there; but they had two arc lamps burning on their night lamps, with one mantle in each arc lit! It impressed me as being about the poorest thing they could do, and that it would have been better to turn them all out than to do that. I think the proper thing to do would be to illuminate the entire office, both inside and outside, to attract attention.

Mr. Rahn—The ideal way of displaying fixtures, in my opinion, would be to get acquainted with the man's home surroundings. When a customer comes into the gas office to buy fixtures, the solicitor should acquaint himself with the surroundings of the man at home, the places he wants to light, whether for domestic or window purposes or for display lighting; then the idea would be to arrange in yonr display rooms a place where you could change fixtures and put up the sort of fixture suitable for the customer. The way it is being done generally now is to have a mass of fixtures, which, as Mr. Kraft says, is apt to bewilder one. Attention will be distracted from the particular fixture that you are trying to sell and which the observer really wants, and will be attracted more or less to the other fixtures surrounding it. I think there is where the idea of the dark room would be probably the best, using interchangeable devices, so that you could put up any style of fixture that you might want to display.

Mr. Hulswit—The gentleman referred to putting in a ventilator in the dark room, which we constructed. I do not think that would have been possible unless we arranged one with an electric fan, because we were situated in the center of a big business block. We gave that matter some thought, but could not perfect a practicable plan.

Mr. Oots—As to the dark room. I had an experience in Alton, Ills., and, in addition to the heat, while we had a ventilator, we found the lights we had were too much for the room. In addition to that trouble we had bother in getting the consumers to enter the dark room. It was on the side, and while it was open and accessible through a large archway, customers would step into the office, pay their bills, and, unless we requested them, would pass out without seeing our fixtures or line of glassware. At our present location we have no dark room, and our fixtures all displayed in the front office. I might suggest we have our best ranges and better line of fixtures and glassware at the front of the office, so that we start out by showing the best and lead them down to the cheaper class of articles.

Mr. Gregg—At the present time in the lighting work our gas company is taking up quite vigorously co-operation with the architects on all new buildings, and find that in the better class of residences they do not pipe for gas at all beyond the kitchen. We also follow up all manufacturing buildings to see that the proper number of risers are put in to take care of both the illuminating and industrial gas.

Mr. Corscot—I have not very much to add to what has already been said, but it occurs to me that having your display room darkened would be rather objectionable and uninviting. If you want to show a fixture, especially to get the night effect on it, it would be better to have a dark room; but I believe the office should be made as inviting as possible to get people to come in to look over what you have.

Mr. Kimball—We have made a start in the direction of getting a good showroom, and have changed our office around with this in view. I would like to ask Mr. Armstrong if he thinks it would be well to have somebody exclusively employed to look after the selling of the stuff displayed. We light up our windows every night, but use electricity for that purpose, because we are not satisfied with the gas witches.

Mr. Corscot—How does Mr. Armstrong regulate his window lighting outside? Does he regulate it in the same way that he does in the office, by means of a clock, and if that is the case, would it not require numerous clocks?

Mr. Armstrong—We operate our entire system by means of one clock on every separate installation.

Mr. Glass—The cost of this clock is very small. An ordinary alarm clock will do the work.

Mr. Wiggers—I do not know that I can say a great deal about display window lighting of our own, for the reason that we have space down below the sidewalk, so to say. We have a fair office display room that we tried to fit up with various kinds of burners, glassware and fixtures—not only the kind that we sell, but some that we have there for display purposes, merely to fit up the room and make it look more pleasant. The lighting of windows is quite a problem, not only as regards a clock system, for occasionally you want something a trifle more convenient, so that you can light them all by merely touching a button, or from a distance, from any place in the office. Several devices on the market are adapted to this purpose, such as the jump-spark, the direct battery, and the by-pass system. At present we are doing a little experimenting with the various kinds of apparatus and cannot really say yet which is the better one. Our window lighting has been done mostly from the outside with outside arc lights—that is, consumer's lighting—and find that probably gives the best satisfaction, for the reason that we run up against so many different kinds of windows. You find windows closed in the back, not properly fitted up on top, and it is quite expensive to put in false ceiling with glass to reflect your light. If you have such a window it is quite a job to get the people to keep it clean so as to get the full benefit of your light. Where one has open windows, that is, without backs, lighting by means of inverted lights with angle shades is a very good proposition. We have tried that by cutting holes in false ceilings and inserting an arc lamp, just having the globe part of the lamp stuck in, but it is not altogether ornamental. If we were somewhat further along on these lines I could say more about it.

Mr. Viles—Would not a mechanical device be advantageous?

Mr. Haseltine—We light our windows with electricity, and we use gas also. Our office burned down about 2 years ago. At that time we had two fronts, one lighted with electricity and one with gas, and had the like device that Mr. Armstrong noted, an alarm clock, also the same arrangement of electric lighting for lighting windows.

Mr. Jones—The idea of darkening the salesroom rather appeals to me. I think it shows up better the effect of the lighting, if the cus-

tomer complains of heat we might help out the other fellow a little bit by employing an electric fan. We do not want to hurt his feeling too much. The idea of making the gas office a home for the people I think is a good suggestion. We turned over the use of our office during the lenten season to one of our churches, which act made many friends for us. We made them very welcome, and it was a good idea.

The President—We built in Eau Claire about 2 years ago one of the handsomest offices that could be desired for a gas company in a town of 20,000 people. Many thought we were extravagant, but it is not true. A good office, with lofty ceilings, a nice display of everything around, I take it is a great asset to any company. Companies thinking they can do business in a little old-fashioned back place are making, in my opinion, a mistake. The office should be well lighted at night. We should set an example to the people. That is our business; is it not? What is the use of telling a merchant he should do this when you don't do it yourself. The most difficult problem in connection with business houses is to light windows satisfactorily. If you put gas inside of a closed window, alongside of drygoods or other goods of a perishable nature, they may be injured in some way, and you don't want the gas in those closed windows, and yet they want a good light. The solution of that problem, in my opinion, is exterior lighting; but it should be made attractive in the daytime. People do not want to have their fronts disfigured. I do not know that we have finally solved our best method of lighting windows. We can get the light, but we do not want a lot of unsightly things hanging outside. They ought to be ornamental. It is an unfortunate condition, and we are to blame for it largely, that the better class of residence lighting is done by electricity. The impression is thoroughly well established that gas is a back number in that respect; that a modern residence should be lighted exclusively by electricity. We hear it all along the line: My gas has got to be taken out; I have got to modernize my house; I must put in electricity! When they go in for electricity they go in for something that is handsome, some that has a decorative effect. They do not complain of the light given by gas, but it is the decorative effect in their homes which customers desire; nor is it a question of cost with this class of people. It is a question of how the place is going to look. We have been letting ourselves drop back, and we say, here is your old-fashioned fixture, let us put on a lamp here, there and somewhere else, here a chimney, and go around and light it; but the lamp chimney sends smoke up to the ceiling, and the customers will not have it at any price. They would not take that kind of a thing if you would give it to them. It is largely a matter of fixtures, appliances and education. We can give the people the light and the decorative effect which they desire; but we cannot do it with a lot of cheap fixtures. If you are going into the high-class business, you must give the people what they want. It is not a matter principally of lighting altogether, it is rather a question of decorative effect than of lighting, although this class of people desire both. We have been neglecting the decorative feature until it has come to this, that in a fine residence they will not put in gas lights at all for lighting purposes. It is our fault. I do not know that I have anything more to say on this matter, but it is very important, in fact fundamental, that we get in with the gas fixture men and move them to assist us by making those designs, fixtures and the like right and attractive. I am not referring to the small residence lighting, towards which the energies of gas companies have been largely directed in the past, I refer to the best class of residences and the work which we have lost in this direction.

Mr. Glass—I want to call your attention to the spot in the center of this room (pointing to a very dark spot around the electric light chandelier) as an indication that there are other things besides gas that spoil the ceiling. I think perhaps I ought to explain in regard to the character of the fixtures we are handling, and that are shown in our salesroom. Our Company made it a rule for a good many years not to pipe new houses nor to sell fixtures for new houses. We only go into the houses that have been built and occupied for one year or more, giving the plumbers and gasfitters the opportunity to pipe and equip the houses when they are new, and if they do not do that, then we feel at liberty to go in after a year. That will account for the comparatively cheap grade of fixtures that we show in our rooms. The subject of ventilation was spoken of here, and in the fitting up or equipping of the salesroom that should not be overlooked. The people are afraid of the excessive amount of heat from gas compared with electricity, and we do not want to have anything in our salesroom that will emphasize the belief they have that gas is hot. The room should be thoroughly ventilated and arrangements should be made for keeping only a few of the lights going constantly, turning on the others conveniently as they are wanted to show the glassware.

Mr. Armstrong—We have planned that ventilation business practically as Mr. Glass has suggested. We have planned on having a couple of large registers at the back of the salesroom, and we get a continuous current of air in that room on through to the front. We only keep one light going; the other lights are used only as people want to see the glassware.

A unanimous vote of thanks was then tendered Mr. Armstrong for his excellent paper.

Next Place of Meeting.

The President—We will now hear the report of the committee appointed to select a place of meeting.

The Secretary—The committee, in its report with respect to selecting a place for annual meeting, to be held during 1910, recommends that the meeting be held in Milwaukee.

[Motion made, seconded and unanimously carried adopting the report.]

Report of Committee on President's Address.

The Secretary—The next order of business will be the report of the Committee on President's Address.

Mr. Hazeltine presented the report as follows:

To the Members of the Wisconsin Gas Association: Your committee to whom the President's address has been referred beg to report as follows:

We heartily commend Mr. Douglas's remarks on the matter of taxation of gas companies, and appreciate the vast amount of preliminary work which he has done in bringing this matter before the Association, and in a tentative way before the Railroad and Tax Commissions of our State.

We would recommend that a committee be appointed, with Mr. Douglas as Chairman, to bring this matter properly before both Commissioners, as we believe that through this committee a great amount of good may accrue to the Wisconsin gas companies.

We feel with Mr. Douglas that the Association has suffered a great loss in the death of our fellow member, Mr. B. F. Ellison, of the Superior Water, Gas and Electric Company, and we beg to offer the following resolution:

Whereas, It has pleased God to remove from us our friend and brother, Mr. B. F. Ellison, late Manager of the Superior Gas, Water and Electric Company; and *Whereas*, he was known to us as a man of sterling worth, a true and loyal friend, ever ready to assist any who appealed to him for assistance and advice, and a devoted husband and father,

Be It Resolved, By the Wisconsin Gas Association, now assembled, that we deeply mourn his loss and extend to his family our heartfelt sympathy.

Resolved, Further, That the above resolutions be spread upon the minutes of our meeting, and a copy of the same be forwarded to his family.

We feel that a hearty vote of thanks is due to Mr. Douglas for his efficient work as President during the past year and for the advance which this Association has made under his able guidance.

W. E. Haseltine,
B. D. Viles,
W. H. Hulswit,
W. Jones,
} Committee.

[Motion made, seconded and unanimously carried adopting the report.

Report of Committee on Nominations.

The President—The Committee on Nominations will now present its report.

The report called for was presented by the named Committee:

To the Wisconsin Gas Association: Your Committee on Nomination of Officers of this Association respectfully reports and recommends for the ensuing year the following named gentlemen:

For President.—Mr. R. B. Brown, Milwaukee, Wis.
For Vice-President.—Mr. A. K. Ellis, Appleton, Wis.
For Secretary and Treasurer.—Mr. H. H. Hyde, Racine, Wis.

Respectfully submitted,
John Corscot,
B. D. Viles,
J. D. Taylor, Jr.,
} Committee.

Representative of the Wisconsin Gas Association to the Directorate of the American Gas Institute for the term of 2 years, commencing immediately after the adjournment of the session of the American

Gas Institute for the year 1909, the present representative, Mr. S. J. Glass.

JOHN CORSCOT, } Sub-
B. D. VILES, } Committee.

Mr. Glass—I move as an amendment to the sub-report that Mr. David Douglas be made the representative of the Association to the American Gas Institute.

Mr. Corscot—I know that Mr. Glass is a modest man and does not want to be his own successor, perhaps out of a feeling of courtesy; but it seems to me it is due the Association of Wisconsin that its representative should be continued for more than one term; and I think, in order to make him useful to us it is proper he should serve at least two terms. I have a great respect for the suggestion of Mr. Glass to the President of this Association, and should be heartily in favor of making him the representative, if it were the first selection, but inasmuch as Mr. Glass has served during one session of The American Gas Institute, and as he has but fairly got warm in the nest that was assigned him, it seems to me but right and proper he should continue for another term. I, therefore, hope the amendment Mr. Glass suggests out of his extreme modesty will not prevail.

The President—As there is no second to the amendment it cannot be considered. Personally I appreciate the compliment conveyed to me by Mr. Glass, and thank him for it, but the matter of representation in the Gas Institute is a very important business matter. It is not a matter of compliment. Mr. Glass is the representative of this Association, and he is the proper man for it. Therefore, the question before you is, shall the report of the committee be adopted?

[Motion made, seconded and unanimously carried adopting the report of the committee.]

The President—The Secretary says his desk is clear. If anyone has anything now to bring forward, let him appear.

Mr. Glass—if there are any here who have not been over to the office we would be glad to have them call to see us, or make themselves at home at the works or the meter shop or either and both.

The President declared the meeting adjourned.

High Pressure Gas Distribution for Commercial Purposes.

[Prepared by MR. H. M. MOORE, for the Southwestern Electrical and Gas Association.]

It is with some degree of temerity that I have attempted to comply with our President's request to write a paper on this subject, for as my own experience with high pressure distribution is limited, I will have to depend very largely upon the experience of others in order to do even the slightest justice to the subject.

My first experience with high pressure gas distribution was in the small town of Sycamore, Ills. The main plant was located in a neighboring town 6 miles away, and a line of 4-inch pipe was laid from the main to the basement of the office in Sycamore, where was stationed a duplicate system of regulators by which the gas was passed to the low pressure mains for general distribution over the town. Only the consumers along this 4-inch line were supplied directly by high pressure. On this main we carried a pressure of from 10 to 30 pounds, which would not have permitted direct connection without some means of reducing the pressure; so at each residence we installed an individual governor or regulator by which the pressure was reduced to about 3 inches water pressure or about .1 of 1 pound steam pressure. This regulator was so connected that, should it any time fail to perform its duty and allow the full pressure to pass, there was no danger to the occupants of the house, as a seal would be blown and the gas thereby turned into the air. Our service along this line was highly satisfactory, but occasionally a seal would blow and a heavy leakage would have resulted unless promptly attended to. On the low pressure mains the service could not be excelled, as there was practically the same pressure at all times, no matter how large or how small the consumption. During the 9 months I was in charge at Sycamore our pressure did not vary more than .2 of an inch except at one time when a 3-inch main broke in two.

At Austin I have lately put in a high pressure booster line, and it has demonstrated to my mind that high pressure is the solution of our troubles from small mains. In the early days of the plant the greater part of the main laid was 2-inch. The plant grew until it was practically out of the question to supply some parts of the city during the heavy load periods of the day; so we laid about 2¼ miles of 4-inch pipe as a high pressure distributing line and installed four No. 4 Reynolds district governors and a Westinghouse compressor, by which means we have overcome our trouble and very materially reduced our distribution labor cost.

Much has been said and written about the heavy leakage caused by high pressure. No doubt this would be the case where the mains were not originally intended for such service and not properly tested out; but I do not find that my leakage has been very greatly increased, and when the line is entirely completed I do not expect it to be any heavier, for I am testing under 45 pounds, seeing that each joint is tight, while I shall carry only 15 to 20 pounds when I am through testing. But you see I save the expense necessary to take out the large amount of 2-inch and replacing it with larger main.

Mr. F. H. Shelton, of Philadelphia, in a paper read before the Western Gas Association, says:

"Various reasons to the contrary no doubt occur, especially to those who are satisfied with the present practice and who usually bring out objections to any proposed new departure. Enormous leakage, danger, loss of candle power due from compression, the expense of individual house governors, and the expense of the compressing machinery, are all reasons that no doubt come to mind."

These are all problems that had to be solved and charged against the gain to be derived by having the capacity of the existing mains increased many times. Mr. Shelton in his paper further says:

"According to accepted authorities, other things being equal, four times a given pressure will double the delivery of gas. Taking an average of 2 inches as a starting point, in common practice about 5 pounds pressure would mean, therefore, a delivery of about 8 times as much gas as at present, and 20 pounds would mean about 16 times as much. If our distribution system could, without replacing, be made to distribute from 8 to 16 times more than at present, by comparatively simple and inexpensive additions and means, and without substituting large new pipe, is not the idea well worth consideration?"

Mr. Geo. F. Goodnow, one of the best authorities on high pressure distribution, in a paper read before the Western Gas Association in 1902, quotes the following from *The Metal Worker:* "While it is improbable that any action will be taken by the authorities to force the companies to distribute their products through mains which will not, from leakage, make the opening of the streets a nuisance, the authorities can control the leakage or insist that the gas shall not be distributed under heavy pressure. * * * As benefits appear to be derived from the new method of distributing gas, it is quite probable that high pressure gas distribution will be attempted in old mains or that the same material that has heretofore been used in low pressures will, in order to save cost to the plant, be used in smaller mains and high pressure resorted to in order to supply the customer." And then adds:

"Such a criticism of high pressure distribution needs no answer among gas engineers, as none of them would think of putting 30 pounds pressure inside a lead joint gas main, and the general public will not be alarmed unless serious accidents occur, and such we have no reason to fear from our experience."

Mr. Goodnow's predictions regarding the safety of high pressure have been fully justified in the light of later experience. The manner of connecting the consumer's house or place of business is such that the high pressure cannot be thrown against a tin meter, or should the regulator fail to hold the pressure the safety seal would blow and the gas would be discharged into the air, not into the building. When heavy oil was used for seals we had a number of them blow and no harm resulted except the leakage; but since mercury seals were put into use it is an infrequent occurrence.

Mr. Goodnow also says:

"A mile of 1¼-inch pipe at 25 pounds initial pressure will deliver as much gas as a 4-inch cast iron main at 25-tenths pressure, and a 2-inch pipe under similar conditions will deliver as much as a 6-inch. A computation shows that a 1¼-inch and a 4-inch, a mile long, will deliver under these conditions about 3,000 feet per hour, and a 2-inch and a 6-inch about 9,000 feet per hour. With 50 services per mile the cost would be:

One mile 4-inch cast pipe, pipe laid	$2,112
Fifty 1¼-inch services	195
Fifty cocks and boxes	55
Total	$2,362
One mile high pressure 1¼-inch pipe, pipe laid	792
Fifty regulators	300
Fifty ¾ cocks and boxes	50
Fifty lock cocks	25
Fifty ¾ services	150
Total	$1,317

This shows you what a great saving can be accomplished by high pressure distribution. In the discussion of this paper there was much skepticism shown, but to-day the most skeptical has become convinced that high pressure gas distribution is both efficient and economical, and the old claim, that there was a large loss of candle power caused by compression, has not shown up in practice. Prior to the date of Mr. Goodnow's paper I was furnishing gas, with both high and low pressure in Sycamore, Ill., with equally good results. I might cite many instances of the successful operation of high pressure plants, but the plant of the North Shore Gas Company, which supplies all that part of the Illinois shore of Lake Michigan, from Evanston to Waukegan, is sufficient. In the list of 10 or 12 suburban towns on its line all but one or two have nothing but high pressure, and all are being served splendidly.

For boosting low pressure mains, high pressure is the most logical means that can be adopted. Suppose you have a city the size of Dallas, which has a large amount of main that has become too small to supply the demands upon it. It would be very expensive to take up all this main and relay it with larger main, but at a comparatively small expense you could belt the city with a high pressure line and, with district regulators, discharge the gas into your low pressure lines at the very points where your pressure was the weakest, and thereby maintain the desired pressure all over the city.

In the American Gas Light Journal, March 22, you will find a very excellent paper on this subject by Mr. W. B. McDonald, which goes more into detail than I have attempted to do, but I wish particularly to call your attention to the following, taken *verbatim* from that paper:

"A test for cost of compression, made 2 months after the Clayton compressor was installed, gave a cost of $\frac{8}{10}\frac{5}{6}$ cents per 1,000 cubic feet. This cost per 1,000 cubic feet is for coal only. The maintenance and repairs were not considered, and the coal used was West Kentucky pea and nut slack at 88 cents per ton laid down on boiler room floor, and giving an efficiency of 6 pounds water evaporation to 1 pound of coal consumed. The repairs to the compressor have been trifling and such as could be done by our employees."

Tests made by Mr. Edward C. Jones, of San Francisco, with gas made by the new Lowe process, or all-oil process, showed that the candle power was reduced 1.6 candles under 30 pounds pressure, or from 21.6 to 20 candles, and was gradually reduced until, at 3,000 pounds pressure, the candle power was only 5.5 candles. Taken all in all, I am thoroughly convinced that high pressure distribution for commercial purposes can be safely adopted.

The Organization and Operation of a Claim Department.

[Prepared by Mr. W. C. Forbess, for the Southwestern Electrical and Gas Association.]

A claim department for a public service corporation, engaged in the transportation of passengers, becomes a necessity when the volume of business of such corporation reaches a certain stage, and, referring more particularly to street and interurban railway companies, the business does not necessarily have to reach large proportions before claims are made against it and which, if not given attention, may result in expensive litigation; and as the volume of business makes the demand for a claim department, so the volume of business controls its scope and extent. As to the best manner of organizing and conducting such department. This must largely be governed by the amount of money allotted to the department and by the ability of its head to adopt effective methods to accomplish desired results.

In one company with which I am familiar the organization consists of a clerk, whose duty it is to keep all the records and to make out, from the accident reports, a daily report of all accidents, which consists of a statement sufficient to show the nature and extent of same. This report is in triplicate, and reaches the Manager, General Superintendent and Claim Agent. Upon examination of same the claim agent indicates whether or not the accident shall be investigated or the accident report merely filed. In addition to this report they have monthly reports showing in detail the number of accidents during the previous month, number and amount of claims made and how settled, number of suits filed and amount of each suit and the disposition of same; and, further, a yearly recapitulation report. This clerk also does the claim agent's stenographic work and takes written statements of such witnesses as come to the office. They employ what is known as "The card system" which (after a number of years' experience) they consider the best they have tried.

For the investigation of accidents the claim agent has one regular assistant whose duty it is to secure written statements of witnesses. These statements reach the claim agent's desk each morning and, after examination by him, are stamped with his initials and sent to the files, or in the event of a serious accident are discussed with the investigator for the purpose of indicating to him other points to be developed. From time-to-time they employ such extra help in this line as their needs require.

A claim agent should reserve to himself the settlement of all claims and the handling of all court cases. There should rarely ever be a case tried that he is not present and actively assisting the attorneys both as to having the witnesses present and especially in calling the attention of the attorneys to salient points, which can and should be developed from the witness while on the stand, and, let me add here parenthetically that I believe it an important part of the claim agent's duties to assist his attorneys in the trial of cases for the reason that he is in closer touch with the witness and the facts of the case than the attorney who frequently meets the witness for the first time at the court house when the case is called for trial.

The operation of a claim department brings it in touch not only with the public, but with every other department of the corporation, and to make it successful it must have the active co-operation of all. It must have the co-operation of the heads of all departments and their assistants in order that full and prompt reports of all accidents are received. It should have the co-operation of the rank-and-file of the employees, in order that it may not in anywise become embarassed in obtaining the facts surrounding each and every accident, and which often are peculiarly within the knowledge of the employee who was operating the car or machine. To obtain this co-operation, the claim agent should occasionally meet the men in a body at their quarters and discuss with them the accident problem in its various phases, going into detail as to cause, how same could have possibly been avoided, and the amount of money expended in the adjustment of same, inviting the men to express their ideas on the subject.

The investigation of accidents brings the claim department into active touch with the public, and experience has taught me that the investigation should be made as soon as possible after the accident, while the facts are yet fresh in the minds of the witnesses, thus forestalling any effort on the part of would-be unscrupulous friends or representatives to pervert the facts. The investigation takes both tact and knowledge on the part of the investigator. He should be able to approach all classes of people; he should have knowledge of the value of testimony to the extent of being able to discern when he has developed the main facts and secure all the facts, whether for or against the company, and if the statement of the witness is against the company to develop it even more fully, so that the department may be advised as to what it has to meet in handling the claim. After the investigation is completed, then comes either the adjustment of the claim or the suit. It should be the policy, where liability is apparent, to settle the claim, if it can be settled on a reasonable basis, and thus keep the matter out of court. The company of which I have spoken has been very successful in this direction. To cite one instance worthy of special notice: That of a car leaving the track, turning a complete somersault down an embankment, one person being killed and 31 others injured. Not a single one of these claims reached the court house and the settlements were on a very reasonable basis.

When we conclude that a claim is fraudulent, we should exert all our energies to uncover the same and decline a compromise for any amount, preferring to expend the money in exposing the fraud. We believe it the duty of the claim department to discourage by every means possible the filing of claims and suits with the mere hope of extorting a sum of money by compromise.

As is a well recognized fact by most of us, there is in every community a clique of damage suit lawyers, some of whom maintain efficient claim departments; and, without intending to reflect upon the bar as a whole, it appears to me a sad commentary on the profession that the damage suit shark can and will resort to shameful methods in order to pilfer the treasury of a corporation, and with the client's feigning injury and perjuring testimony berate the corporation before the jury. These parasites are adroit in their line of work, and from personal observation I know that a large percentage of the money paid by the street car companies in Texas is to satisfy judgments founded upon fraudulent claims in the entirety, or with elements of sham so prominent that the claim agent often wonders if there is any justice in our system of jurisprudence for the corporation. Especially do I call attention to this matter for two reasons: First, to arouse to more effective methods and co-operation than at present prevail among the various companies for the combating of this growing evil; second, that the managing officers of the various companies may more fully appreciate the work of their claim departments in exposing some of these frauds and not pull the purse strings too tight when it is necessary to spend money to accomplish results.

Special English Correspondence.

COMMUNICATED BY NORTON H. HUMPHRYS.

SALISBURY, ENGLAND, July 10th, 1909.

Papers at Institution Meetings.—Decease of Mr. W. A. M. Valon.—Electric Telpherage at Keighley Gas Works.

For some time past there has been a feeling amongst members of Gas Managers' Associations, to the effect that the established order of things in the matter of communications, or as they are popularly termed, papers, and the discussions thereon, leaves room for considerable improvement, and this has found a voice in the columns of the *Gas World*, subsequently to the June meeting of the Institution of Gas Engineers. Though specially directed to the meetings of that Institution, and possibly brought to a head by certain events in the course of the proceedings at the recent gathering, they apply equally to all Associations conducted on similar lines. The main idea is that the proceedings should be made more attractive, and it is in accordance with the general spirit of the age. Our various religious bodies, with scarcely any exception, have recognized the need for brightness and cheerfulness, for avoiding anything that could be called prosy or dull, and as much may be said in respect to asssmblies for any purpose. There is a tendency to shorten speeches and to infuse a tone into them that is likely to retain the attention of the hearers. And the possibilities of something in this way appear to be on the minds of the writers who offer their suggestions. It is hinted that some of the audience sit out the meetings rather on account of a feeling that they are doing their duty as members, or out of consideration to the reader for the time being, who may be a popular man in other ways, than because of a real and live interest in the proceedings. It has become an established practice to issue proofs of the papers in advance, for the benefit, primarily, of those who intend to take part in the discussion. In view of the fact that all who are interested are in that way afforded opportunity for acquainting themselves with the matter to be discussed, it is suggested that the reading of the paper becomes unnecessary and a needless occupation of time. We are also reminded that "papers," although put in one category by the executive as things to be read and afterwards discussed, comprise a great variety and that the committee should have extended powers. At present they can only accept or reject, and except under unusual circumstances they do not exercise the second prerogative. So it is an established custom that all communications shall be read by the respective authors unless there is a reasonable objection to them as not conforming to the objects of the Association. But reference is now made to the practice in some other professional societies, which might be considered and probably adopted with some modifications. Some papers are valuable contributions to the Association, but are not suited for reading from a platform. Others would attract more attention and be more acceptable if submitted in a summarized form. And others, again, are suitable for reading in full and do not admit of shortening. And possibly the mere fact of being expected to read the paper may deter some contributors from coming forward. There are many men in England who would sooner face a mad bull than get up on a platform and speak to an audience for 15 minutes. So it is suggested that the committee should have power to consider all communications submitted and to order them to be read either in full or in abstract or to be simply published in the transactions. And that a few simple rules for the guidance of intending writers or speakers might be adopted. The committee should also have full powers in the matter of inviting suitable speakers for discussions.

There is much that is worthy of careful consideration in these ideas. Some of them fit in with my remarks on attendance of members at meetings, offered last month. If it becomes more difficult for gas engineers to arrange for a few days' absence, it follows that the inducements and advantages in doing so should be increased. If their time is more valuable, there is stronger reason why it should be occupied to the best advantage. Valuing the time of each member at 5s. per hour, it follows that a gathering of 600 costs 60s a minute, and a waste of 15 minutes represents the very respectable sum of £45. In regard to the publication of the proceedings, a copy of which is always presented to each member, it would be easy to show that a page of unnecessary matter represents a substantial cost. Evidently the time of the meeting and the cost of publication, are both items of sufficient importance to call for full and careful consideration.

The advancement in photography also admits of a more extended use of the special lantern, as a means of illustrating papers of a descriptive character. Half a dozen views projected on a screen will convey more information, and that in a form convenient for remembering, than half an hour's reading. And while the chief points of the letter press are not in an easily assimilated form, a striking photograph can be recalled months and years after the time. One can frequently remember the chief features of a good picture, long after they have entirely forgotten the words or even the personality of the lecturer. Our technical magazines have not been slow to appreciate this fact - the current number of the *Journal of Gas Lighting* contains about 40 illustrations inclusive of diagrams—and the technical associations might well follow the lead.

A long and honorable career as a gas engineer was brought to a close on Saturday last by the decease of Mr. W. A. M. Valon. As was the case with regard to another distinguished name in the gas industry to whom allusion has lately to be made under similar distressful circumstances, the work which Mr. Valon undertook in connection with the immediate advancement of the profession is not cognizant to the younger members, to whom he was chiefly known as one of our leading consulting engineers and professional witnesses, largely interested in assessments and valuations of gas property.

Nearly 40 years ago, whilst acting as engineer to the gas works at Ramsgate, his researches on the subject of generator furnaces placed him in the front, and did a great deal in the direction of the development of a simple and cheap design of setting, not too complicated, and not too expensive for even the smallest gas undertaking. The shallow furnace, with or without a regenerating arrangement, as used in our smaller works to-day, received a great assistance from his personal investigations, as set forth in 2 papers submitted to the Gas Institute in 1882 and 1884. In 1894 these and other labors were recognized, with the unanimous assent of the members, by the award of the Birmingham medal "for great service rendered." On four occasions previously he received the President's medal. He was President of the Southern Association in 1883, and of the Gas Institute in 1892.

He also interested himself in "The Oxygen Process of Gas Purification," and introduced a scheme for stop prepayment meters for small consumers, which is still in use. There is no slot for the insertion of coins, but an arrangement for setting the meter to stop at any desired point. The inspector calls, say once a fortnight, receives cash for sufficient gas to last out till his next visit and sets the meter to deliver the quantity paid for. At the time when this was introduced, the slot was still in some respects an uncertain quantity, being by no means so reliable and satisfactory as at present, and the simpler device adopted by Mr. Valon found many followers. It was characteristic of his work that he favored simple and tried methods, and it was this trait of mind that led him to form a clear opinion as to the generator, as distinct from the regenerator, at a time when many regarded the two as inseparable. The introduction of gaseous fuel into the retort house was greatly hindered by the idea that an expensive and complicated arrangement of setting was necessary, that a depth of about 9 feet below the charging floor level was required, and that the dampers could not be properly adjusted without the services of a skilled chemist. To day there is no hesitation in erecting a simple

form of setting at a cost not exceeding 50 per cent. more than the old-fashioned grate setting and in handing the same over to the care of any stoker who is competent to work on the established lines. For some years past a son has been associated with him in business, and this gentleman will no doubt continue the same, and maintain the high position universally accorded to the name, in the profession.

Amongst the numerous plans for the transit of solid material that are such a notable feature in gas works in the present day, that of telpherage, by which I understand that the load is carried by a single overhead rail, being suspended from a suitable trolley or carriage. This system presents the advantage that it leaves the floor clear in buildings, as the rail can be supported from the roof or walls, and as much may be said for the outside, as a pair of uprights at intervals represents all that is required. I have lately been interested in reading an account of its application to the handling of coke at the Keighley Gas Works, which should be referred to by all who are interested (and who is not) in this question. It is evident that a simple application, such as a rail from the retort house to the coal shed, or to the coke yard, or from the purifier house to the oxide shed, is a matter that need not heavily tax the most slender resources. The rail, and a few suitable skips to be pushed by hand, offer considerable advantage as compared with the customary truck or barrow. In all but very small operations, however, some kind of mechanical propelling power would be applied, and at Keighley an electric motor, which offers several advantages for this kind of work, has been adopted.

The installation comprises a gas engine, direct coupled dynamo switchboard and wiring, electric telpher, 820 feet of track, Belton's patent coke skips, storage hoppers, coke breaker, rotary screens, etc. The engine is a 33½-horse power National with self-starter, and it is coupled to a Siemens 18 G. compound wound 220-volt generator, giving an output of 19½ kilowatts and running at 250 revolutions per minute.

There is another generating set in the same power house, that supplies the charging machinery, and in the event of a breakdown to either the other can be switched on to do the work. The track runs the entire frontage of the retort settings, a length of 340 feet, the center line being 5½ feet from the faces of the retorts (of which there are nine beds of 9's or 81 in all), and 18½ feet above charging floor level. From the retort house the track is continued to the hoppers outside, a distance of 116 feet, and beyond them takes a semicircular curve and a run of 80 feet to cover the coke storage. Outside the house it was necessary to raise the track about 6 feet, which is done by a rise of 1 to 30 in order to get clearance room. The height of the track being 34 feet above the coke storage floor level, gives a capacity for about 2,500 tons of coke. The track is on Messrs. Strachan and Henshaw's mono-rail principle, and is made up of a 12 by 6-inch rolled steel joist, on the top of which is mounted a renewable track rail, 3 inches high, which forms the actual running rail. The joist is supported, at 20 feet intervals, by overhead cross joists in the retort house and by trestle uprights outside. The telpher is one of Messrs. Strachan and Henshaw's 2-motor machines, one for hoisting or lowering and one for travelling, and these are controlled from a driver's cage attached to and forming part of the machine. It will hoist 30 cwt. loads at the rate of 60 feet a minute and travel 500 feet a minute. Belton's patent skips are used, and in two sizes, taking 15 cwt. and 18 cwt. respectively, the smaller size being specially shallow for use with the bottom retorts only. The skips can be run about the floor on wheels, when not carried by the machine, and can be picked up, raised or lowered and emptied at any point of the track.

The quenching arrangements are very simple. A steel water tank is provided on the line of the track at the outside of the retort house, into which the loaded skip is immersed. Empty skips are deposited alongside the retorts and as each one receives its load it is picked up, carried out to the quenching tank, dipped, hoisted again, and discharged as required at any point of the track. This plant will handle one load in 3 minutes. There is a very complete set of screening, breaking and sorting machinery actuated by 8-horse power Siemens motors, and the sorted material can be delivered by gravity into rail trucks, carts or wagons, the receptacle being loaded in a few minutes. The overhead support system certainly appears to give more control over the lifting, transport and deposit of the material, and it does not rob the storage space. In dealing with material such as coke or coal, it is an advantage to be able to discharge it at any desired level from the ground up to close under the carrier rail. Much dust and grinding of material are thus avoided.

Items of Interest
FROM VARIOUS LOCALITIES.

GLORIOUS old "Ike" Battin, as he will be fondly and always known to his associates (all too few they now are, more's the pity), sends this greeting to us under date of the 17th inst.: Dear JOURNAL—Inclosed find $3 for the year 1909. * * * We are having good business, good crops and good prospects in the Middle West, in the great mountain regions, and on the Pacific Coast. Our growth [Mr. Battin is Treasurer and Engineer to the Omaha (Neb.) Gas Company] exceeds almost that of any other part of the United States, excepting possibly, that in and around your great city. Kindly remember me to any of the older staff of the JOURNAL. * * *"

"W. T. E.," writing to the JOURNAL from Montreal, Can., under date of the 21st inst., remarks: "I've no particular interest in the Montreal Light, Heat and Power Company, save that as a taxpaying resident, and somewhat familiar with the staff of the Company, I wish them and it all possible success; for as you know no other material thing has more to do with the making or marring of a city than may be done by the corporations that deal directly with the residents - such as tramways and water lighting supply. In your well-put account of the session of the Canadian Gas Association held here last month (unfortunately I was out of the city when that convention was on) your correspondent, whose perception is surely of the Yankee type, justly remarks that our hitherto in a measure, sleepy old buttress feels 'the impulse of modernity,' and it is gratifying to know that our triple public utility giant is anxious to quicken that impulse, in that 'tis putting the right sort of men at the helm. These will soon cause us to forget the persistently dull and stupid days of the Josephs dynasty, especially respecting the lighting end of the game. Indeed, if it had not been for the cleverness of Brother Skinner, whose facility for keeping things going is as keen as it was in his many earlier days, Heaven knows to how much greater depths our lighting system would have sunk. Now, however, we are blessed with two men—real, live men—one an Englishman and one a Yankee, who are sure to put us where we belong in this lighting respect. Take Mr. Norris, for instance. He has not been with us so very long, yet he is welcomed heartily everywhere, and is one of the best living proofs that an English gentleman is never in any sense a snob; again, take Mr. Mann, our new engineer—just one look at his eyes, one grip of his hand, a dozen sounds of his voice, and you have him figured as an executive of the best American type. A man of action, whose commanding, to be understood and applied, is not a shout, whose decision is not made without thought, whose personality is such as to command the confidence that is akin to respect. But, apart from this moral dissecting, each of the named gentlemen will have his hands well filled this short season of ours, for here is a scant outline of the tasks put down for accomplishing ere the snow flies; and that harbinger and accompanier of our cold spell will be at hand all too early: In the first place, retort house No. III., holding beds of 11's, is to be rebuilt, a new boiler house to accommodate 1,000-horse power is to be constructed and equipped, with such other minor details as an ammonia concentrator, valve house, laboratory, draughting shop and office. This, to begin with. Meanwhile we Canadians are not so thoughtless not to value at its utmost the fraternality displayed by the JOURNAL in sending a representative to attend the sessions of our baby Association. Your semi-centennial issue certainly is a gem; and, let me add, not the least interesting of the articles that you print is the one by our own noblest Roman, Mr. William H. Pearson, whose fame as a gas man will be with the industry until the last light flickers out."

THE proprietors of the Springfield (Mass.) Gas Light Company have authorized Superintendent Fowler to go on with the construction of an office building on the site owned by the Company on West State street, at the rear of the plot on which the handsome building of the Institution for Savings stands. It will cost $30,000.

"E. C. H.," writing under date of the 21st inst., notes: "In an article, printed in the *Gas World*, dated the 3d inst., under the caption of 'A Lady's Experience as a Gas Manager in Ireland,' it would seem that the writer was under the impression that the lady in question is the first woman gas manager in the field. From what she states the woman-in-question evidently believes she is the real original in the field. Newspapers far and near have taken up the story, and

laid her according to the thought of her priority. This, however, is an error, in that the author knows for quite some time Miss J. J. Dickerson, who has been General Manager and Purchasing Agent for the Benton Harbor, St. Joseph Gas and Fuel Company, of Burton Harbor, Mich., for a number of years past. Anyone on meeting Miss Dickerson will realize that she is equal to the task of operating a gas property; and I am sure the owners of the property will be the strongest attestants to the fact that she has acted in capable, intelligent management of their properties at Benton Harbor and St. Joe. The latter place by-the-way is the Gretna Green of America."

AT a special meeting of the Newport (R. I.) Gas Light Company, Mr. Henry Bull, Jr., was elected President, vice Melville Bull, deceased. It is worthy of note that in its entire history, which covers a period of over 60 years, it has had only 3 Presidents—first, Henry Bull; second, Melville Bull; third, Henry Bull, Jr.

THE returns filed with the City Controller, of Indianapolis, by the the Indianapolis Gas Company, for the half-year ended June 20, 1909, show these increases over those on like accounts for the corresponding period of 1908: Output, 22,176,400 cubic feet; meters in service, 1,314. The totals on similar accounts for each half-year are: 499,642,600 and 477,446,200, respectively; meters, 33,318 and 32,004, respectively.

A CORRESPONDENT in Northampton, Mass., forwards the following, under date of the 19th inst.: "At the annual meeting of the shareholders in the Northampton Gas Light Company the annual reports showed the Company had enjoyed a very prosperous year. The sendout increased something over 5½ per cent., and the meters in use total 2,650. The stockholders elected the following Directors: L. C. Seelye, Frank L. Starr, C. N. Clark, E. H. Banister and H. C. Crafts; President, C. N. Clark; Vice-President, L. C. Seelye; General Manager, E. L. Banister; Assistant Treasurer, R. M. Starkweather; Superintendent, Frank A. Goodwin.

ABOUT mid-month the Des Moines (Ia.) Gas Company paid into the city treasury the sum of $4,995 98, which payment represents 2 per cent. of its gross receipts for the first half of the current year. During the last twelvemonth the payments on the named account totalled $9,523 66.

THE New York *Herald* of the 18th inst. printed the following: "For the first time since it has been doing business the Consolidated Gas Company received an order yesterday to 'turn on the gas' by wireless. The message came by way of Sea Gate, and was received when the offices of the Company were first opened in the morning. It was unsigned, but seemed definite enough to cause the despatch of a workman to the premises indicated, and when the sender of the message reached her apartment just before noon the range in the kitchen was ready to take up its burden where it had been cut-off in the spring. 'Turn gas on, 1690 Broadway; L. M. Bowker apartment,' the message simply said. It was unsigned. Mrs. L. M. Bowker was a passenger on the 'Amerika,' which reached her pier a little after 10 o'clock, The message cost Mrs. Bowker about $2.50."

THE special election held to determine whether or not the franchise of the Springfield (Mo.) Gas and Electric Company should be extended for a further period of 6 years was carried in the affirmative.

THE Northern Illinois Gas and Electric Company has expressed its anxiety to extend its main system to and through Sandwich, Ills. The Managers of the same concern expressed a like anxiety over this matter in 1907. Now, however, that the clouds have rolled by the Company is anxious for another try.

THE Public Service Corporation, of New Jersey, will pipe gas to and through the streets of Chatham, next month. The line is now up to the Passaic river bridge, the main feeder coming through from Millburn township.

THE Board of Directors of the Louisville (Ky.) Gas Company have perfected the following organization: President, F. M. Sackett; Vice-President, John Stites; Executive Committee, Jno. Marshall, H. V. Loving and D. X. Murphy.

THE proprietors of the gas companies at Brockton, Bridgewater and Stoughton, Mass., have petitioned the Board of Gas and Electric Commissioners for the right to consolidate. The capital stocks of the joint venture have been fixed at $160,000.

THE bill now before the Brownwood (Tex.) City Council, under which Messrs. Geo. W. Stone & Co., of Cleveland, O., seek to operate a gas works in the named place, met with no opposition when it was put on the order of second reading.

MR. JAMES HART has been appointed Overseer of the interests of the Worcester County (Mass.) Gas Company, in so far as its properties in Brookfield and Warren are concerned.

"MAY they ever happy be! An expression that is directly traceable to the information vouched me last week that, some time in September next, Miss Antoinette Perry will become the better half of Mr. Frank W. Frueauff, Vice-President and General Manager of the Denver (Col.) Gas and Electric Company. And still it seems that Mr. Henry L. D. persists in declaiming, 'No wedding bells for me.' —C."

MR. FRED. L. Peltier has resigned the position of Assistant Superintendent to the Worcester County (Mass.) Gas Company, to take up the duties of a responsible position on the staff of the Bigelow Carpet Company, Clinton, Mass.

MR. A. R. JOHANNESON is now in charge of the plant of the Spencer (Mass.) Gas Company.

"J. R. A.," writing from Ontario, Cal., under recent date, says: "Early this month the plant of the Ontario-Upland Gas Company was put in active operation. At the outset there were 296 consumers' services in line. The plant is located to the south of the town, well away from the residence district, and it represents an expenditure not far from $60,000. The lemon-curing and packing houses here are sweating the fruit by means of gas heat, and the scheme is working to a charm, the thought that such curing would be carried out more evenly than by the methods heretofore employed havigg been very happily supported. The gas plant is equipped with duplicate generators."

AT the annual meeting of the shareholders in the Consolidated Gas Company, of Long Branch, N. J., the Directors elected were: P. Lehman, E. E. Eysenbach, E. McMillin, A. P. Lathrop, Gustave Maas, Marion McMillin, Jno. S. Foster, F. W. Hope and Jacob Steinbach.

MR. FRANK HELLEN, of the distributing division of the gas service section of the Rochester (N. Y.) Railway and Light Company, recently prepared a paper on "Gas Distribution in Rochester," for the regular July meeting of the Company's section in the National Electric Light Association. It was right to the point, and caused a good discussion amongst those who were present—always a goodly number when Mr. Hellen is on the card to speak.

THE Metropolitan Electric Light Company, of Reading, Pa., in response to the citation of the city authorities for bids for the public lighting of the named city, submitted the following figures:

Five-Year Period. No Lamps.	Current.	Rate per Annum.
700	Magnetite, arc, 320 watts	$76.08
500	Tungsten, incandescent	19.20
On a 10-year basis..700	Magnetite, arcs, 320 watts	65.00
500	Incandescent, tungsten, 75 watts.	19.20

Lighting public buildings, 12 cents per 100 watt hours, net, on a 5-year basis; on a 10-year basis, 6 cents per 100 watt hours, net. The Consumers Gas Company offered to furnish 500 Welsbach arc lamps, all night and every night, at $25 per lamp per annum.

MR. C. H. DUNBAR, General Manager of the Houston (Tex.) Gas Company, continues on his way of adding to the distribution system of the Company. Last year 10 additional miles of mains were laid, and at least an equal number of miles will be added to the system this year.

THE County Commissioners of Missoula, Mont., have assented to the petition of the projectors of the Missoula Gas Company, for the right to manufacture and distribute gas in Missoula.

JUDGE SANBORN, of the U. S. Circuit Court, has accepted the final accounting submitted by Mr. E. L. Hosper, containing the record of his receivership for the Still water (Minn.) Gas and Electric Company.

THE AMERICAN GAS LIGHT JOURNAL

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PROPRIETORS.

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CHARLES H. WADELTON,
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MONDAY, JULY 26, 1909.

The Market for Gas Securities.

Dullness with indecision was the rating factor in the city gas share market last week. The general share trading conditions were also of the indeterminate order, and the situation is altogether chargeable to the tariff tinkering, for the country itself and the cities thereof were never in better standing for the carrying on of mercantile transactions on a huge scale.

The wiseacres have it that now is the time that Brooklyn Union is to show another odd movement in the dividend line, which move will certainly not make it any the easier to prove that the 80-cent gas rate is a calamitous one. Peoples, of Chicago, is steady. The annual meeting of the Equitable Illuminating Gas Light Company is set for this day week. The Peoples (Chicago) Company's quarterly dividend of 1¾ per cent. is payable the 25th prox.

Gas Stocks.

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

16 WALL STREET, NEW YORK CITY.

JULY 26.

☞ All communications will receive particular attention.

☞ The following quotations are based on the par value of $100 per share:

N. Y. City Companies.	*Capital*	*Par*	*Bid.*	*Asked.*
Consolidated Gas Co.	$78,177,000	100	139¼	139⅝
Central Union Gas Co.—				
1st 5's, due 1972, J. & J.	3,000,000	1,000	98	101
Equitable Gas Light Co.—				
Con. 5's, due 1932, M. & S.	1,000,000	1,000	—	105
Mutual Gas Co.	3,500,000	100	155	165
New Amsterdam Gas Co.—				
1st Con. 5's, due 1948, J. & J.	11,000,000	1,000	100	101½
New York & Richmond Gas Co. (Staten Island)	1,500,000	100	37	43
1st Mtg. Gold Bds. 5 p. ct.	1,000,000	—	100	101
New York and East River—				
1st 5's, due 1944, J. & J.	3,500,000	1,000	104	107
Con. 5's, due 1945, J. & J.	1,500,000	—	97	101
Northern Union—				
1st 5's, due 1927, J. & J.	1,250,000	1,000	94	100
Standard	5,000,000	100	—	75
Preferred	5,000,000	100	70	100
1st Mtg. 5's, due 1930, M. & N.	1,500,000	1,000	100	105
The Brooklyn Union	15,000,000	1,000	141½	145
1st Con. 5's, due 1948, M. & N.	15,000,000	—	91½	92
Yonkers	299,650	500	130	—
Out-of Town Companies.				
Bay State	50,000,000	50	¾	⅞
" Income Bonds	2,000,000	1,000	—	75
Binghampton Gas Works	450,000	100	—	65
" 1st Mtg. 5's	500,000	1,000	90	96
Boston United Gas Co.—				
1st Series S. F. Trust	7,000,000	1,000	82	85
2d " " "	3,000,000	1,000	47½	50
Buffalo City Gas Co.	5,500,000	100	5	8
Bonds, 5's	5,250,000	1,000	73	73½
Capital, Sacramento	500,000	50	—	35
Bonds (6's)	150,000	1,000	—	—
Chicago Gas Co. Guaranteed Gold Bonds	7,660,000	1,000	104	106¼
Cincinnati Gas and Electric Co.	29,500,000	100	92	93
Columbus (O.) Gas Co., 1st Mortgage Bonds	1,500,000	1,000	96	98
Columbus (O.) Gas Lt. & Heating Co.	1,682,750	100	90¼	91
Preferred	3,026,500	100	75½	80
Consumers, Toronto	2,000,000	50	200	204
Consolidated, Baltimore	11,000,000	100	—	105
Mortgages, 6's	3,000,000	—	—	118
Chesapeake, 1st 6's	1,000,000	—	—	—
Equitable, 1st 6's	910,000	—	—	—
Consolidated, 1st 5's	1,490,000	—	—	112
Consolidated Gas Co. of N. J.	1,000,000	100	15	17
Con. Mtg. 5's	880,000	1,000	92	95
Bonds	75,000	—	—	100
Denver Gas and Electric	458,000	—	102	105
Detroit City Gas Co	5,000,000	50	—	50
" Prior Lien 5's	4,619,000	1,000	97	100½
Detroit Gas Co., 5's	381,000	1,000	75	80
Equitable Gas & Fuel Co., Chicago, Bonds	2,000,000	1,000	—	101
Essex and Hudson Gas Co.	6,500,000	—	39	40
Fort Wayne	2,000,000	—	—	—
" Bonds	2,000,000	—	55	—
Grand Rapids Gas Light Co., 1st Mtg. 5's	1,325,000	1,000	104½	105
Hartford	750,000	25	190	200
Hudson County Gas Co., of New Jersey	10,500,000	—	112	113½
" Bonds, 5's	10,500,000	—	103	103½
Indianapolis	2,000,000	—	60	70
" Bonds, 5's	2,650,000	—	104½	105
Jackson Gas Co.	250,000	50	92	—
" 1st Mtg. 5's	290,000	1,000	97	100
Kansas City Gas Light Co., of Missouri	5,000,000	100	—	36
Bonds, 1st 5's	3,822,000	1,000	102	104
Lacide Gas Co., St. Louis	10,000,000	100	104	105
Preferred	2,500,000	100	—	98
Bonds	10,000,000	1,000	104	—
Lafayette Gas Co., Ind.	1,000,000	100	—	60
Bonds	1,000,000	1,000	60	65
Louisville	2,370,000	50	143	145
Madison Gas and Electric Co.				
" 1st Mtg. 6's	350,000	1,000	106	108¾
" 6 per cent. scrip, due 1910	100,000	25	60	60½
Massachusetts Gas Companies, of Boston	25,000,000	100	63¾	64
Preferred	25,000,000	100	90½	90½
Montreal Gas Co., Canada	2,000,000	100	218	218¾
Nashville Gas Light Co.	1,000,000	100	110	—
Newark, N. J., Con. Gas Co.	6,000,000	—	56	58
Bonds, 6's	6,000,000	—	137	138
New Haven Gas Co.	2,000,000	25	200	—
Peoples Gas Lt. & Coke Co., Chicago	25,000,000	100	115½	116
1st Mortgage	20,100,000	1,000	—	—
2d "	2,500,000	1,000	104	—
Rochester Gas & Electric Co.	2,150,000	50	88	—
Preferred	2,150,000	50	118	—
Consolidated 5's	2,000,000	—	104¾	105½
San Francisco Gas Co., Cal.	15,500,000	—	—	—
St. Joseph Gas Co.—				
1st Mtg. 5's	751,000	1,000	100	102
St. Paul Gas Light Co.	1,500,000	100	45	47
1st Mortgages, 6's	650,000	1,000	113	116
Extension, 6's	600,000	1,000	112½	115
General Mortgage, 5's	2,465,000	1,000	90	95
Syracuse Gas Co., N. Y.	1,975,000	100	50	55
Bonds	2,047,000	1,000	100	104
Washington (D. C.) Gas Co.	2,600,000	20	385	387½
1st Mortgage, 6's	600,000	—	—	—
Western Gas Co., Milwaukee	4,000,000	—	—	—
Wilmington (Del.) Gas Co.	600,000	50	230	—

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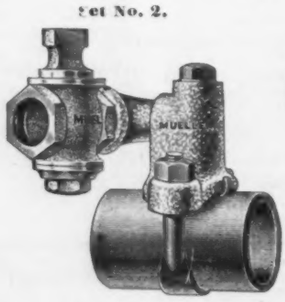

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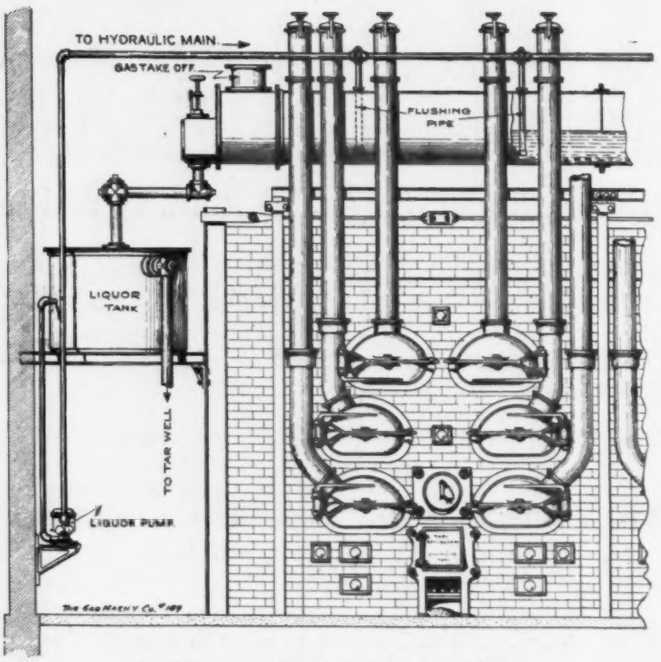

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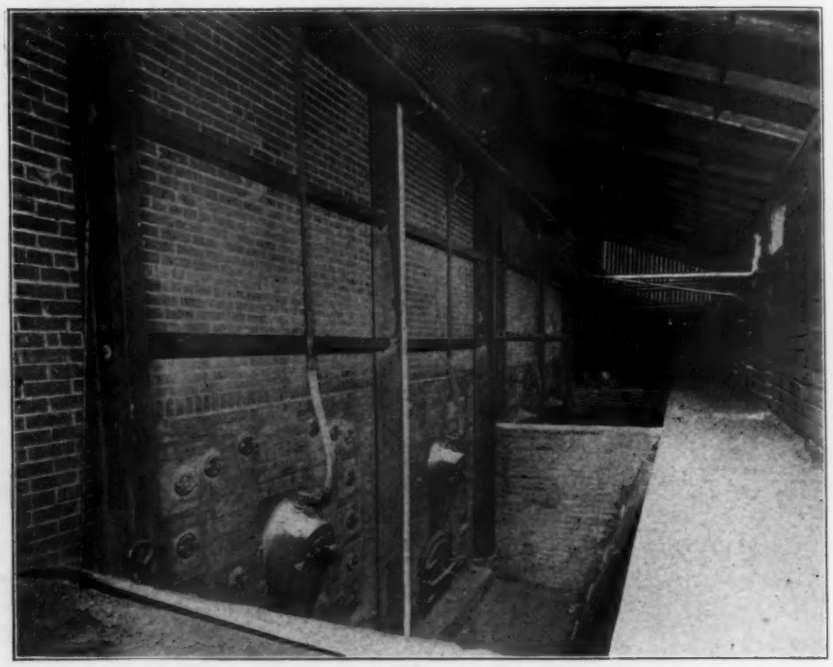

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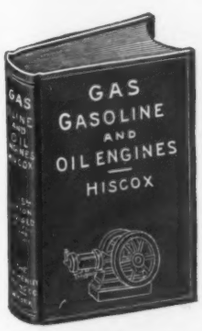

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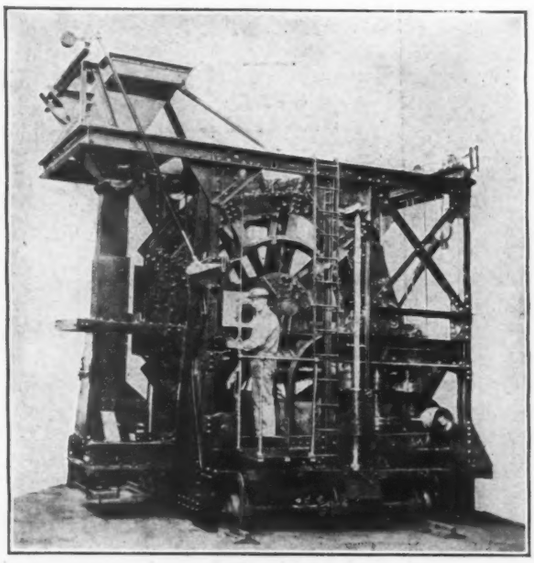

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Has been one of the most conspicuous successes of the past decade in lighting lines. The competing lamps that were brought out in scores during the earlier days had but a brief life and exist to-day principally as unpleasant memories of ill-considered purchases. **Is not the same thing about to be repeated with Inverted Gas Arc Lamps?**

Adopt the **Humphrey Inverted** as your standard and be insured and protected by the strongest, most liberal and progressive gas lighting organization in the world.

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London, England. **Bremen, Germany.** **Wellington, New Zealand.**

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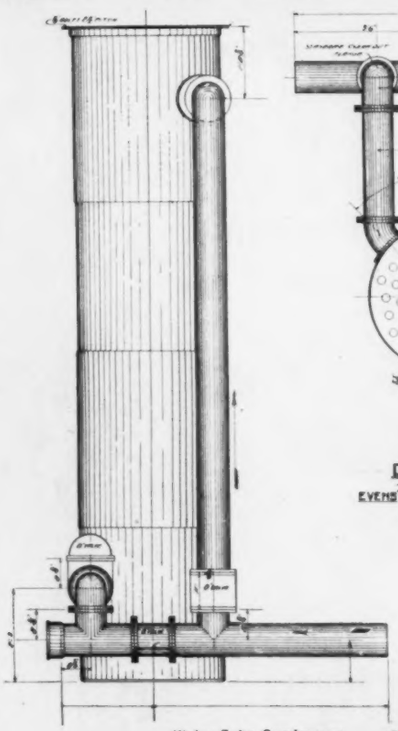
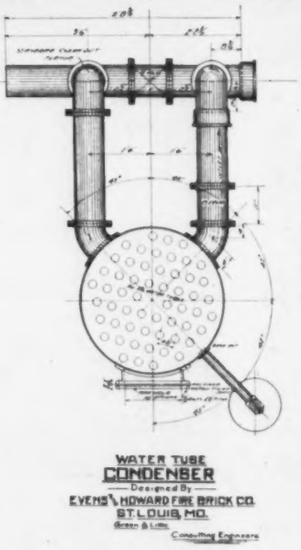
LIVESEY PATTERN STAR WASHERS.

STAR SCRUBBERS.

STAR DRY SEAL PURIFIERS.



Water Tube Condensers



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Designed By
EVENS & HOWARD FIRE BRICK CO.
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Green & Little, Consulting Engineers

GREEN AND LITTLE DESIGNS.

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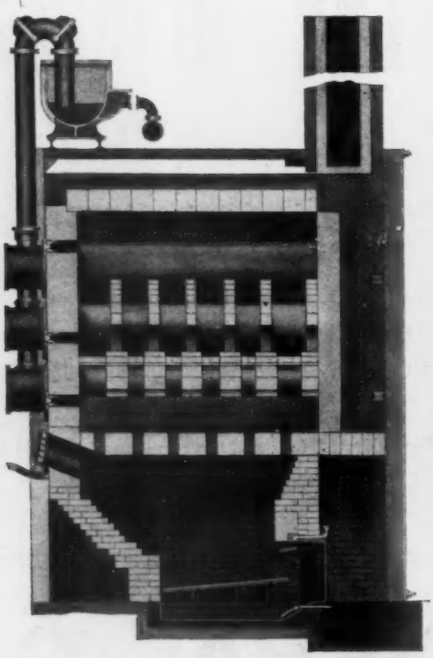
REMOVE ALL TAR, MOST SULPHUR, ALL AMMONIA.
NEED LEAST ATTENTION.



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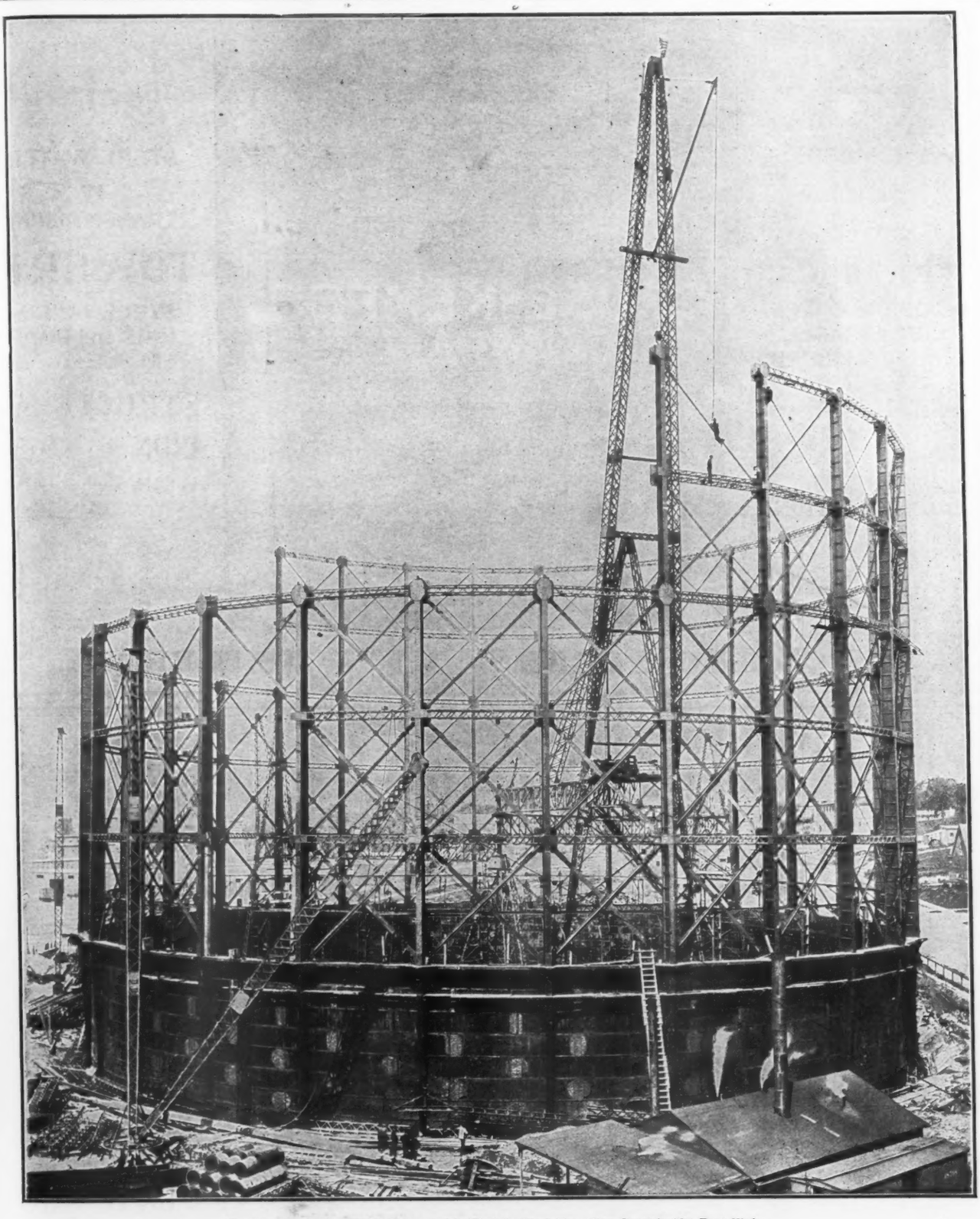

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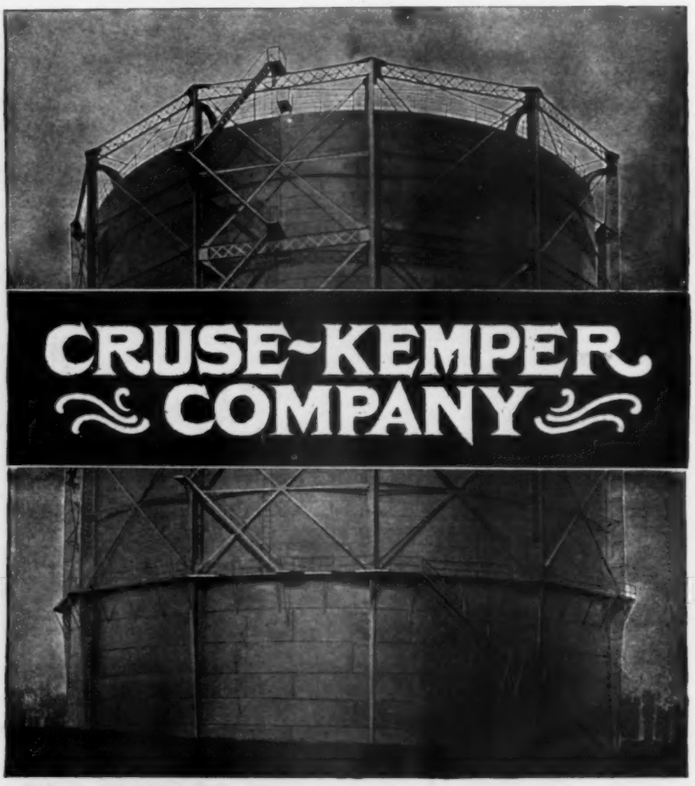

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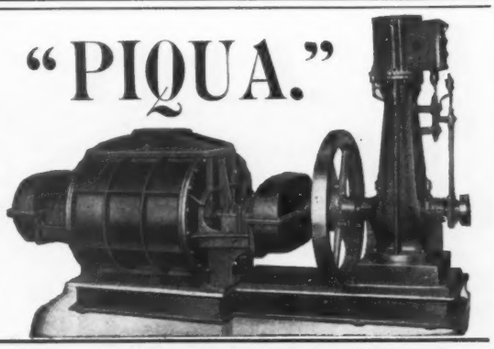

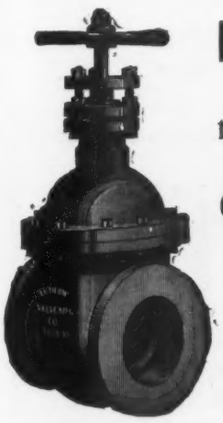

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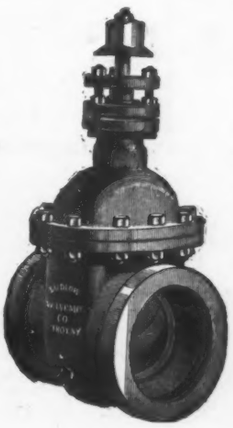

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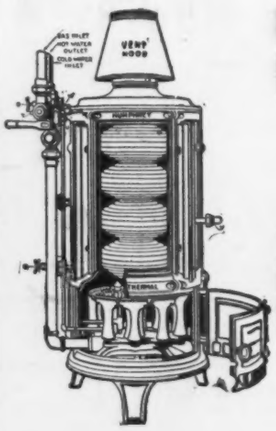

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This Edition of the "Handbook for Gas Engineers and Managers" is a great improvement on all previous editions. Much of the text has been re-written, in order to keep the work abreast of the constant advances that are being made in the Gas Industry.

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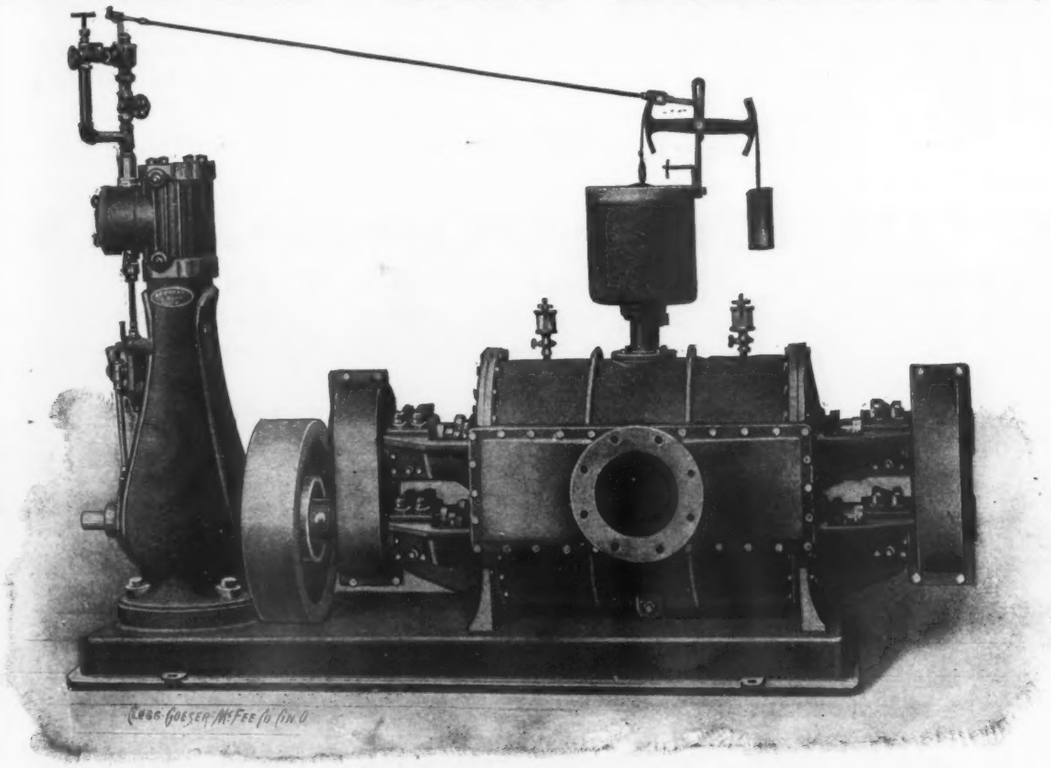

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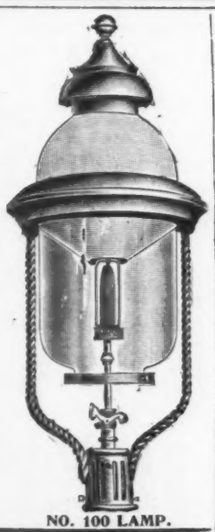

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Every Ironclad Gas Meter is securely sealed to prevent being tampered with.

A single wire and one lead seal does it.

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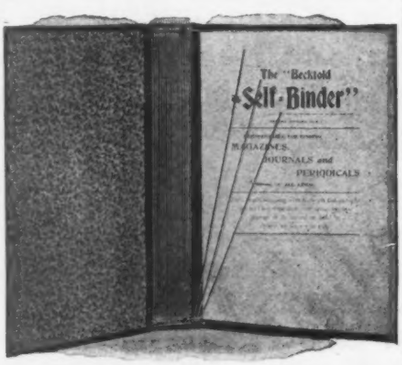

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Photometrical and Experimental Apparatus.

PUBLIC LIGHTING TABLE.

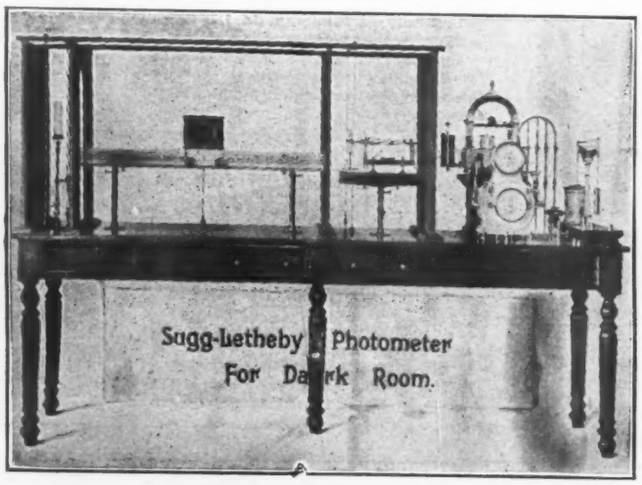
AUGUST, 1909.

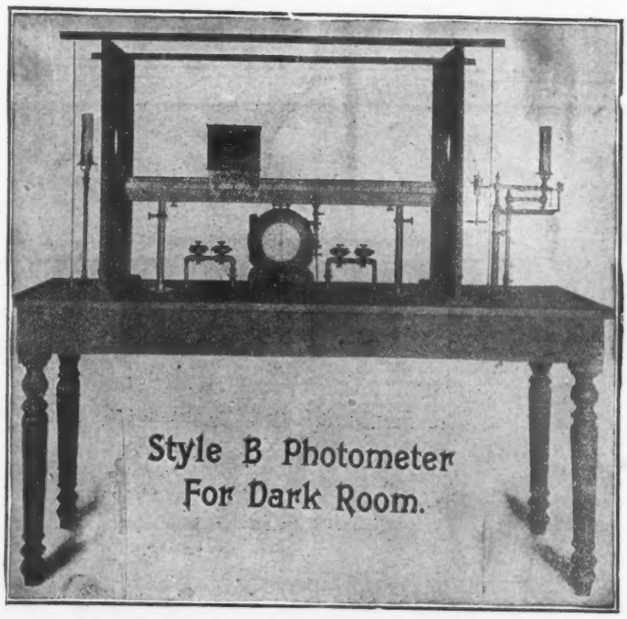
Day of Week.	Date.	Table No. 1. Following the Moon. Light.	Extinguish.
Sun.	1	No L FM	No L
Mon.	2	No L.	No L.
Tue.	3	7 40PM	9.50PM
Wed.	4	7.40	10.20
Thu.	5	7.40	10.50
Fri.	6	7.40	11.20
Sat.	7	7.40	11.50
Sun.	8	7.30LQ	12.20AM
Mon.	9	7.30	1.00
Tue.	10	7.30	1.40
Wed.	11	7.30	2.30
Thu.	12	7.30	4.10
Fri	13	7.30	4.10
Sat.	14	7.30	4.10
Sun.	15	7.20NM	4.10
Mon.	16	7.20	4.10
Tue.	17	7 20	4.10
Wed.	18	7.20	4.10
Thu.	19	7.20	4.10
Fri.	20	8.20	4.10
Sat.	21	8.40	4.10
Sun.	22	9.10	4.20
Mon.	23	9.40FQ	4.20
Tue.	24	10.10	4.20
Wed.	25	11.00	4.20
Thu.	26	11.50	4.20
Fri.	27	12.50AM	4.20
Sat.	28	2.00	4.20
Sun.	29	No L.	No L.
Mon.	30	No L.FM	No L.
Tue.	31	No L.	No L.

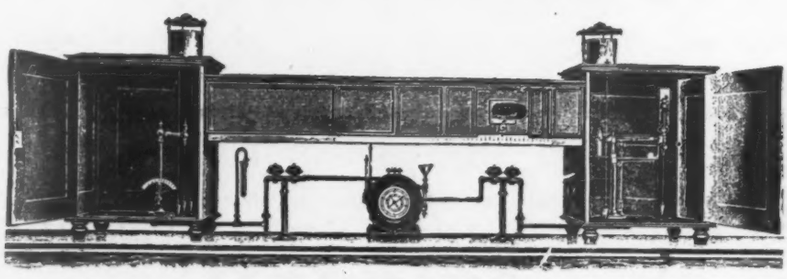
TOTAL HOURS DURING 1909.

By Table No. 1.

	Hrs.Min.
January	212.20
February	183.40
March	173.00
April	151.10
May	144.10
June	138.50
July	145.40
August	160.30
September	180.00
October	201.00
November	216.30
December	233.40
Total, yr.	2140.30







Closed Photometer For Light Room.

CIRCULARS SENT ON REQUEST.

PUBLIC LIGHTING TABLE.

AUGUST, 1909.

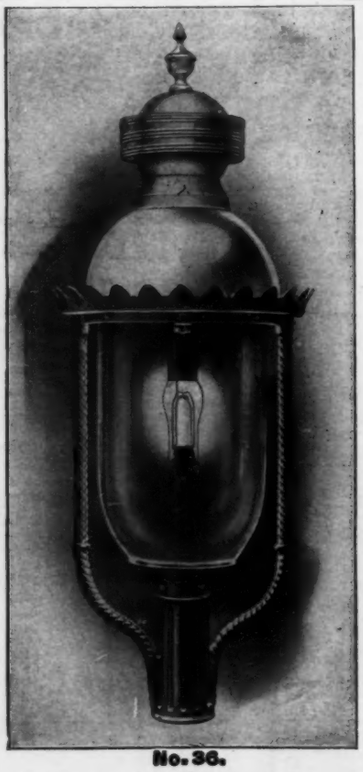
Day of Week.	Date.	Table No. 2. New York City. All Night Lighting. Complete Lighting in One Hour From Time Given P. M.	Complete Extinguishing in 50 Minutes From Time Given A.M.
Sun.	1	7.02	3.27
Mon.	2	7.02	3.27
Tue.	3	7.02	3.27
Wed.	4	7.02	3.27
Thu.	5	7.02	3.27
Fri.	6	6.57	3.37
Sat.	7	6.57	3.37
Sun.	8	6.57	3.37
Mon.	9	6.57	3.37
Tue.	10	6.57	3.37
Wed.	11	6.57	3.37
Thu.	12	6.57	3.37
Fri.	13	6.47	3.47
Sat.	14	6.47	3.47
Sun.	15	6.47	3.47
Mon.	16	6.47	3.47
Tue.	17	6.47	3.47
Wed.	18	6.47	3.47
Thu.	19	6.47	3.47
Fri.	20	6.37	3.52
Sat.	21	6.37	3.52
Sun.	22	6.37	3.52
Mon.	23	6.37	3.52
Tue.	24	6.37	3.52
Wed.	25	6.37	3.52
Thu.	26	6.37	3.52
Fri.	27	6.27	3.57
Sat.	28	6.27	3.57
Sun.	29	6.27	3.57
Mon.	30	6.27	3.57
Tue.	31	6.27	3.57

TOTAL HOURS DURING 1909.

	Hrs.Min.
January	428.30
February	358.15
March	353.10
April	298.10
May	263.20
June	234.45
July	248.30
August	278.00
September	311.25
October	370.05
November	397.40
December	438.35
	3980.25
Deduct on account of 50 min. extinguishing time	30.25
Total, yr.	3950.00

NEW YORK, 318 West 42d Street. BOSTON, 820 Beacon Building. PHILADELPHIA, Broad and Arch Streets. ST. LOUIS, 712 Roe Building. CHICAGO, 218 La Salle Street. SAN FRANCISCO, 512 Oak Street.

WELSBACH STREET LIGHTING COMPANY



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....OF AMERICA....

Controls and Operates the **Welsbach System of Street Lighting.**

Which includes its specially DESIGNED and PATENTED BURNER for PARK LIGHTING exclusively.

Uniformly SUCCESSFUL in 150 Cities and Towns.

By means of the Welsbach System of street lighting the superiority of GAS over electricity for street lighting has been fully demonstrated.

POINTS OF MERIT:

It is { Economical, Attractive, Successful, Up-to-date.

IT LIGHTS THE STREET.

Where there are no gas mains we can furnish an equally good light by our SELF-GENERATING NAPHTHA WELSBACH BURNER, and thereby supply a uniform light in all localities.

Correspondence Solicited from Gas Companies and Others interested in Municipal and Outside Lighting.

No. 38.

Welsbach Junior

THE BIGGEST LITTLE LIGHT IN THE WORLD.

The Welsbach Junior Light is 5 inches high--consists of burner, mantle and chimney--and is attractively boxed in a pasteboard carton.

As its effectiveness and economy become better known the Welsbach Junior will supersede, for universal use in the home, the old-style open flame gas burners.

Showing Welsbach Junior Light used in connection with ordinary glass globe.

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Attaches to Any Gas Fixture.

Completely Hidden from View.

Use your own globe--either gas or electric.

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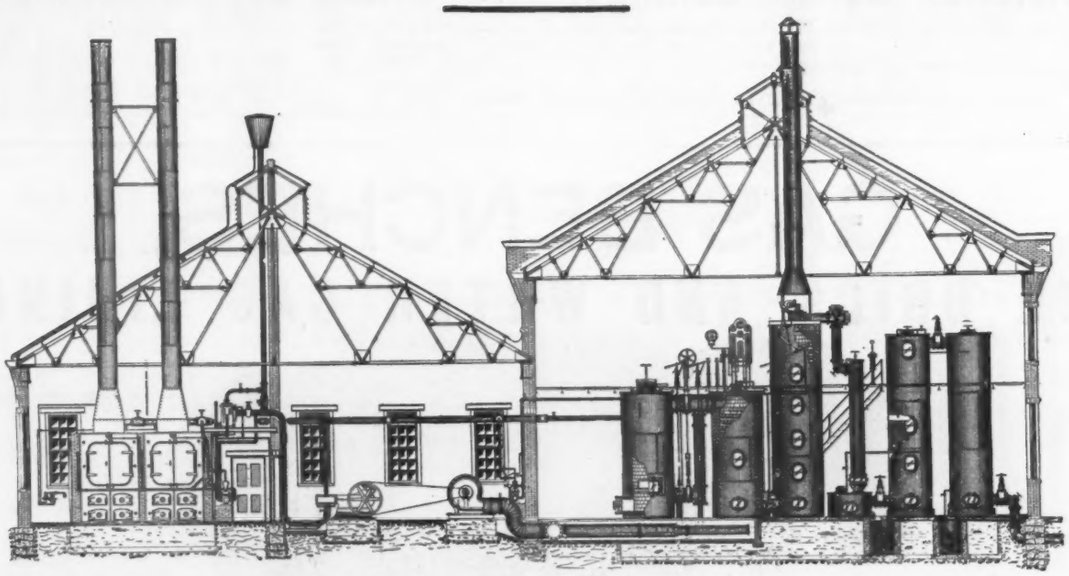

TOTAL SETS INSTALLED TO JULY 1, 1909, ... 704
TOTAL DAILY CAPACITY TO JULY 1, 1909, ... 577,440,000 cu. ft.

Tar Extractors for Carburetted Water Gas.
Photometrical Apparatus.
Gas Analysis Apparatus.
Recording Gauges.
Straight Standpipe System for Coal Gas Retorts.
Straight Standpipe Cleaners.
Waste Heat Boiler.
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Meters for Regulating Air and Steam Supply to Water Gas Apparatus.

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Ground Fire Clay, Fire Sand and Ground Fire Brick in Barrels and Bulk.

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GEROULD'S IMPROVED RETORT CEMENT.

A Cement of great value for patching retorts, putting on mouthpieces, making up all bench-work joints, lining blast furnaces and cupolas. This cement is mixed ready for use. Economic and thorough in its work. Fully warranted to stick.

Price List, f.o.b. NEW CASTLE, PA.

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In Kegs, 100 to 200 " " 6 " "
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KRATER-DINAS RETORT CEMENT.

Universally accepted to be the best cement for patching and repairing retorts, making up bench work, etc. Advantages: Powdered form; only mix with water; no waste; too much mixed, apply water and use the next time; adheres very easy; does not fall out by decarbonization. We guarantee or take back. Many re-orders and recommendations from America, Germany, France, Belgium, etc. Write for price and testimonials.

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"BEST BY TEST."

ESTABLISHED 1868.

L. N. RANCKE, V. Pres. & Mgr. E. L. RIEHA, Engineer.

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HIGH GRADE FIRECLAY MATERIAL FOR ALL PURPOSES.

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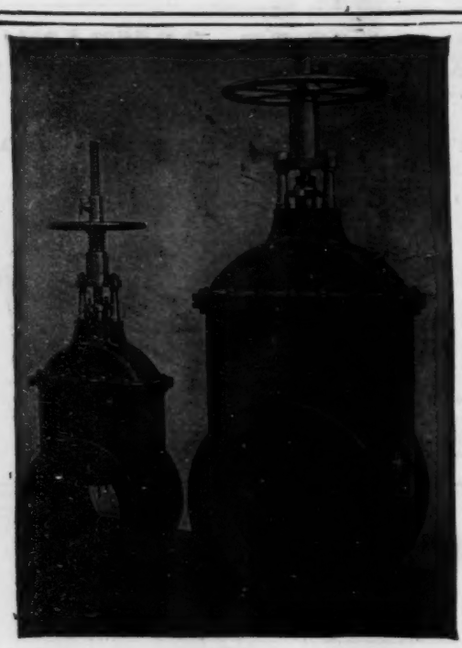

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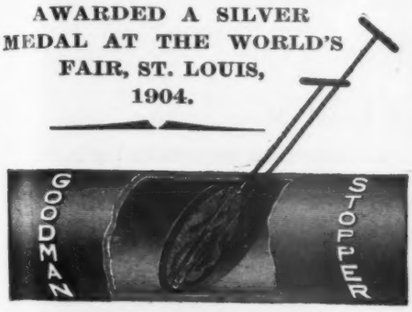

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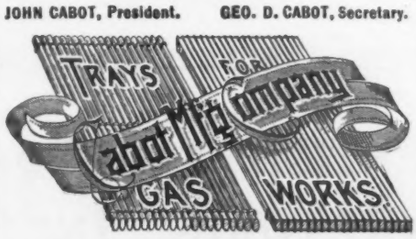

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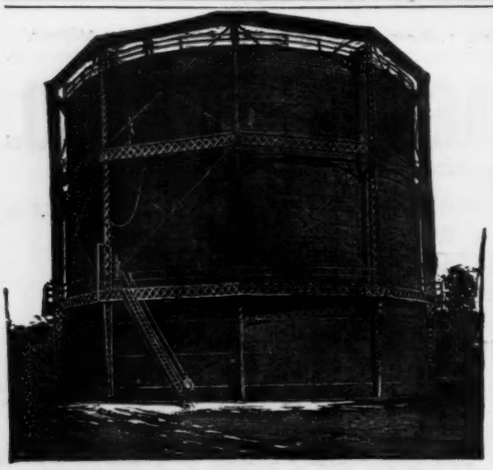

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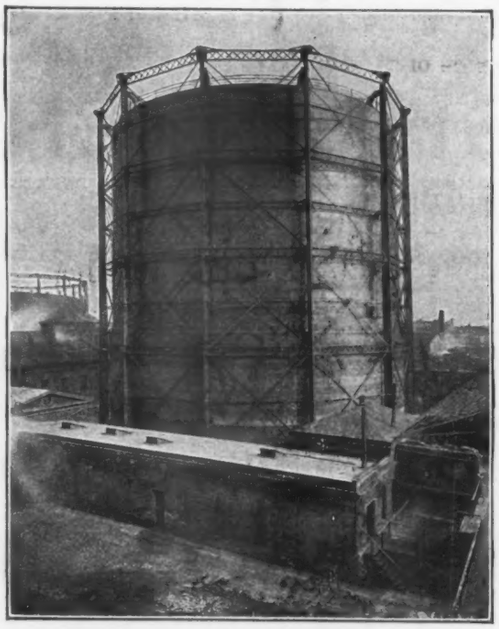

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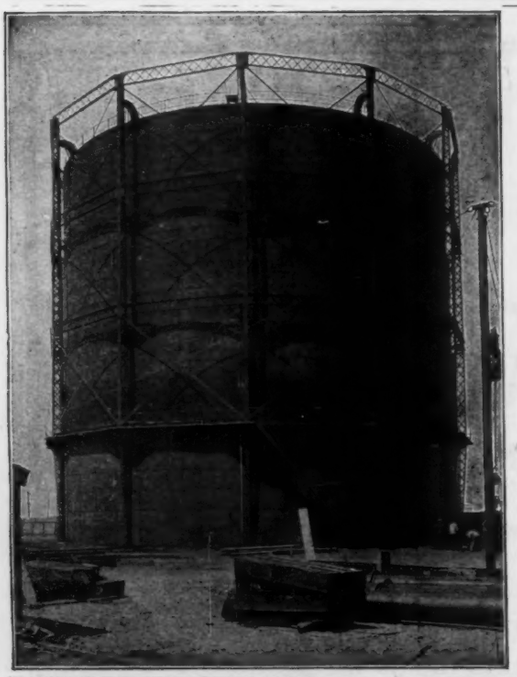

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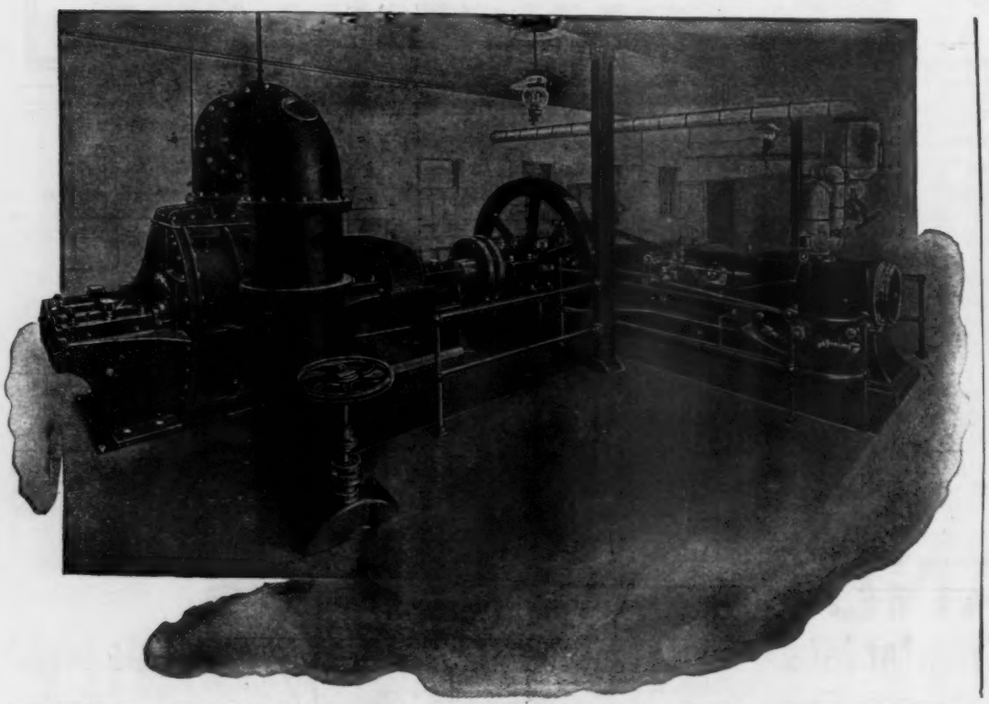

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